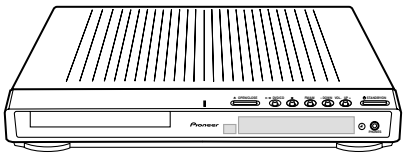
Pioneer sound.vision.soul

Service Manual



XV-DV740

ORDER NO.
RRV2946

DVD/CD RECEIVER

XV-DV740
XV-DV440

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Regional restriction codes (Region No.)	Remarks
XV-DV740	KUCXJ	AC120V	1	
XV-DV440	KCXJ	AC120V	1	

For details, refer to "Important symbols for good services".

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ⓒ**PIONEER CORPORATION 2004**

T-ZZK MAY 2004 printed in Japan

SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65

NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

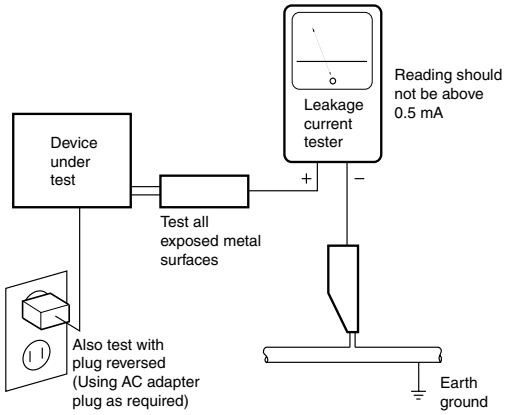
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60 Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5 mA.


Leakage current tester
Reading should not be above 0.5 mA
Device under test
+
–
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

[Important symbols for good services]
In this manual, the symbols shown-below indicate that adjustments, settings or cleaning should be made securely.
When you find the procedures bearing any of the symbols, be sure to fulfill them:

1. Product safety

You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.

2. Adjustments

To keep the original performances of the product, optimum adjustments or specification confirmation is indispensable. In accordance with the procedures or instructions described in this manual, adjustments should be performed.

3. Cleaning

For optical pickups, tape-deck heads, lenses and mirrors used in projection monitors, and other parts requiring cleaning, proper cleaning should be performed to restore their performances.

4. Shipping mode and shipping screws

To protect the product from damages or failures that may be caused during transit, the shipping mode should be set or the shipping screws should be installed before shipping out in accordance with this manual, if necessary.

5. Lubricants, glues, and replacement parts

Appropriately applying grease or glue can maintain the product performances. But improper lubrication or applying glue may lead to failures or troubles in the product. By following the instructions in this manual, be sure to apply the prescribed grease or glue to proper portions by the appropriate amount.For replacement parts or tools, the prescribed ones should be used.

Disc / content format playback compatibility

This player is compatible with a wide range of disc types (media) and formats. Playable discs will generally feature one of the following logos on the disc and/or disc packaging. Note however that some disc types, such as recordable CD and DVD, may be in an unplayable format—see below for further compatibility information.

DVD-Video DVD-R DVD-RW

Audio CD Video CD CD-R CD-RW

Fujicolor CD

- *is a trademark of Fuji Photo Film Co. Ltd.*
- Also compatible with KODAK Picture CD

This player supports the IEC's Super VCD standard for superior picture quality, dual soundtracks, and widescreen support.

Super Video CD (Super VCD)

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1. SPECIFICATIONS

Amplifier section

Continuous Power Output (RMS):
Front, Center, Surround . . 100 W per channel (1 kHz, 10 % T.H.D., 6Ω)
Subwoofer. . 100 W (100 Hz, 10 % T.H.D., 6Ω)
Continuous Power Output:
Front, Center, Surround . . . 75 W per channel (1 kHz, 1 % T.H.D., 6Ω)
Subwoofer. . . . 75 W (100 Hz, 1 % T.H.D., 6Ω)

Disc section

Digital audio characteristics . . . . . DVD fs: 96 kHz, 24-bit
Type . . . . . DVD system, video CD system and compact disc digital audio system
Total harmonic distortion. 0.004%
Frequency response . . . .4 Hz to 44 kHz (96kHz sampling) / 4 Hz to 22 kHz (48kHz sampling)
Wow and Flutter . . . . . .Limit of measurement (±0.001 % W.PEAK) or less (JEITA)

FM tuner section

Frequency range. . . . . 87.5 – 108 MHz
Antenna . . . . . 75Ω, unbalanced

AM tuner section

Frequency range
With 9kHz step . . . . . 531 kHz to 1,602 kHz
With 10kHz step. . . . . 530 kHz to 1,700 kHz
Antenna . . . . . Loop antenna

Miscellaneous

Power requirements. . . . . AC 120 V, 60 Hz
Power consumption 175W
Power consumption in standby. . . . . 0.5 W
Dimensions . . . . . 420 (W) x 70 (H) x 396 (D) mm
$16\frac{9}{16}$ (W) x $2\frac{13}{16}$ (H) x $15\frac{5}{8}$ (D) in.
Weight . . . . . 7.0 kg / 15 lb. 7 oz

Accessories (DVD/CD receiver)

Remote control 1
AA/R6 dry cell batteries. 2
Video cable (yellow plugs). 1
AM loop antenna 1
FM antenna 1
Power cord. 1
Setup Guide 1
Operating instructions 1
Warranty Card 1

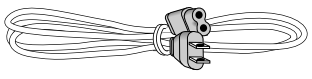
Note

- Specifications and design subject to possible modification without notice, due to improvements.

Manufactured under license from Dolby Laboratories. "Dolby", "Pro Logic" and the double-D symbol are trademarks of Dolby Laboratories. "DTS" and "DTS Digital Surround" are registered trademarks of Digital Theater Systems, Inc.

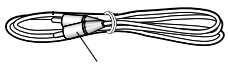
● Accessories

- Power cord (ADG7021)



- FM Antenna (ADH7030)

- Video Cord (L = 1.5m)(XDE3046)



- Remote Control Unit (XXD3076)

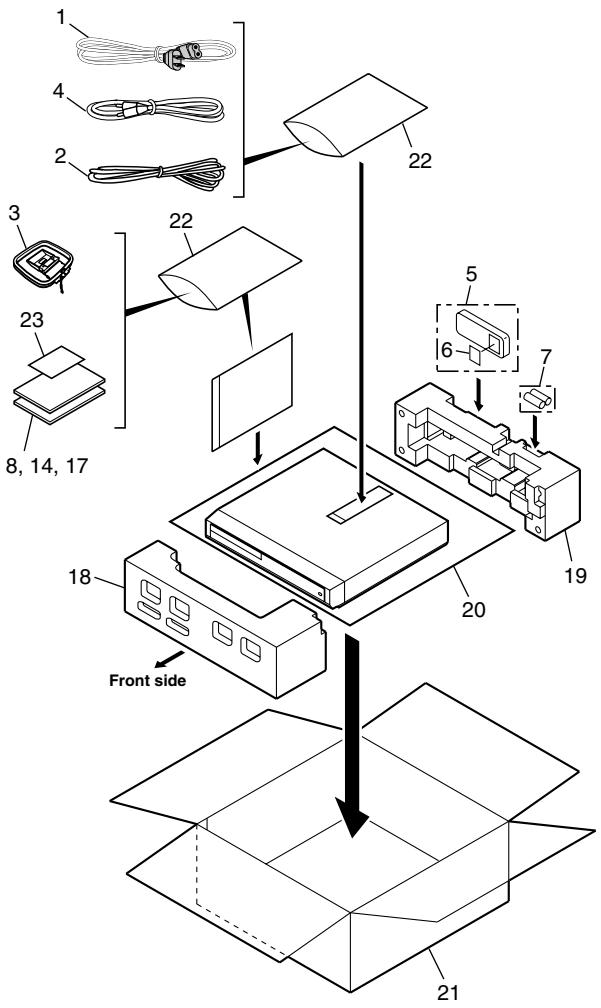
- AM Loop Antenna (ATB7013)

- Dry Cell Battery (R6P, AA)

2. EXPLODED VIEWS AND PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on product are used for disassembly.*
- *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*

2.1 PACKING



PACKING SECTION Parts List

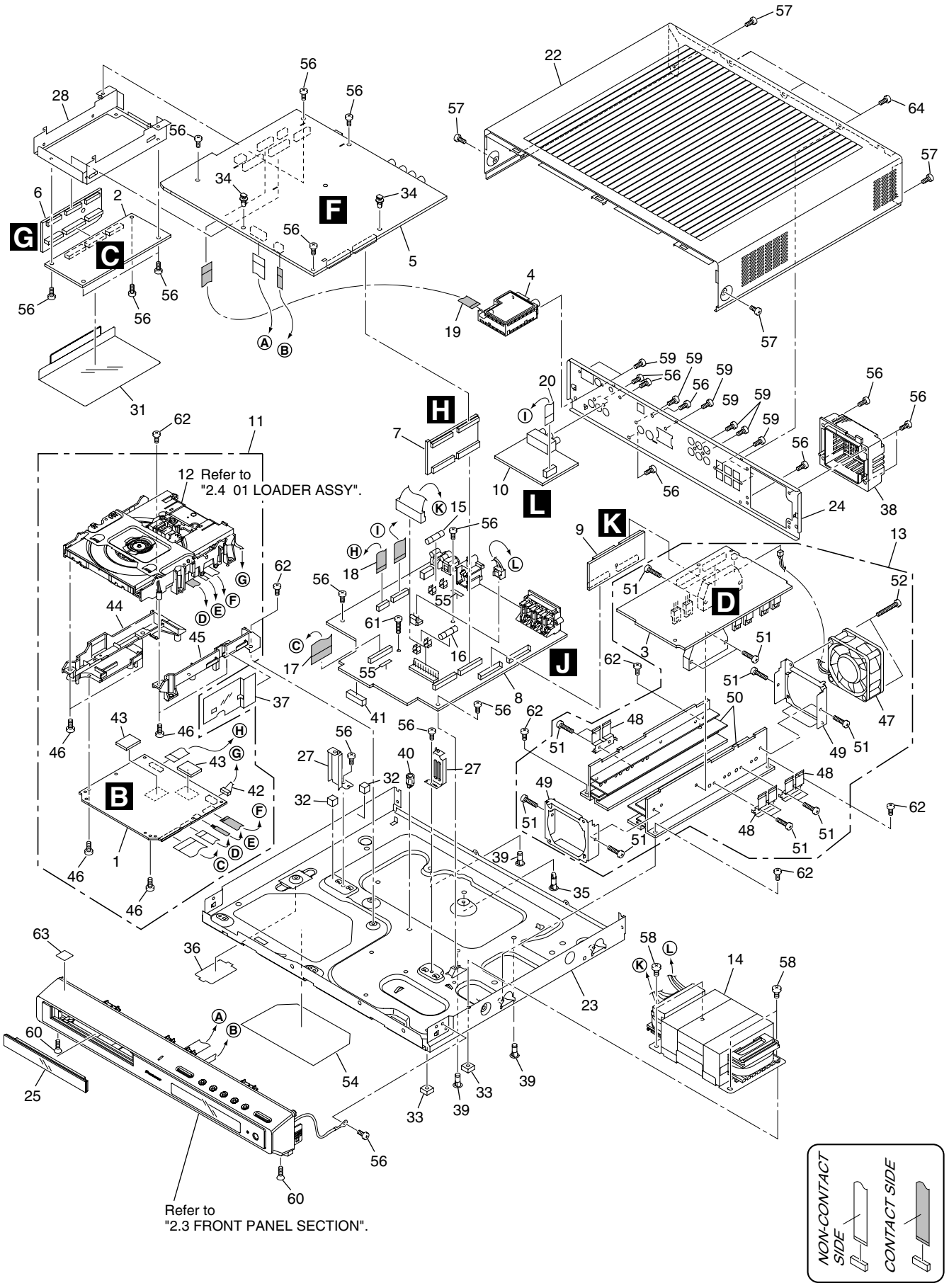
Mark	No.	Description	Part No.
⚠	1	Power Cord	ADG7021
	2	FM Wire Antenna	ADH7030
	3	AM Loop Antenna	ATB7013
	4	Video Cord	XDE3046
	5	Remote Control	XXD3076
	6	Battery Cover	XZN3130
NSP	7	Dry Cell Batteries (R6P/AA)	VEM1031
	8	Operating Instructions (English)	XRB3037
	9	••••••	
	10	••••••	
	11	••••••	
	12	••••••	
	13	••••••	
	14	Operating Instructions (French)	XRC3147
	15	••••••	
	16	••••••	
	17	Operating Instructions (English/French)	See Contrast table (2)
	18	Front Pad	XHA3145
	19	Rear Pad	XHA3146
	20	Packing Sheet	AHG7010
	21	Packing Case	See Contrast table (2)
NSP	22	Polyethylene Bag	Z21-038
NSP	23	Warranty Card	ARY7045

(2) CONTRAST TABLE

XV-DV740/KUCXJ and XV-DV440/KCXJ are constructed the same except for the following :

Mark	No.	Description	XV-DV740/KUCXJ	XV-DV440/KCXJ
	17	Operating Instructions (English/French)	XRE3084	XRE3081
	21	Packing Case	XHD3433	XHD3453

2.2 EXTERIOR SECTION



EXTERIOR SECTION Parts List

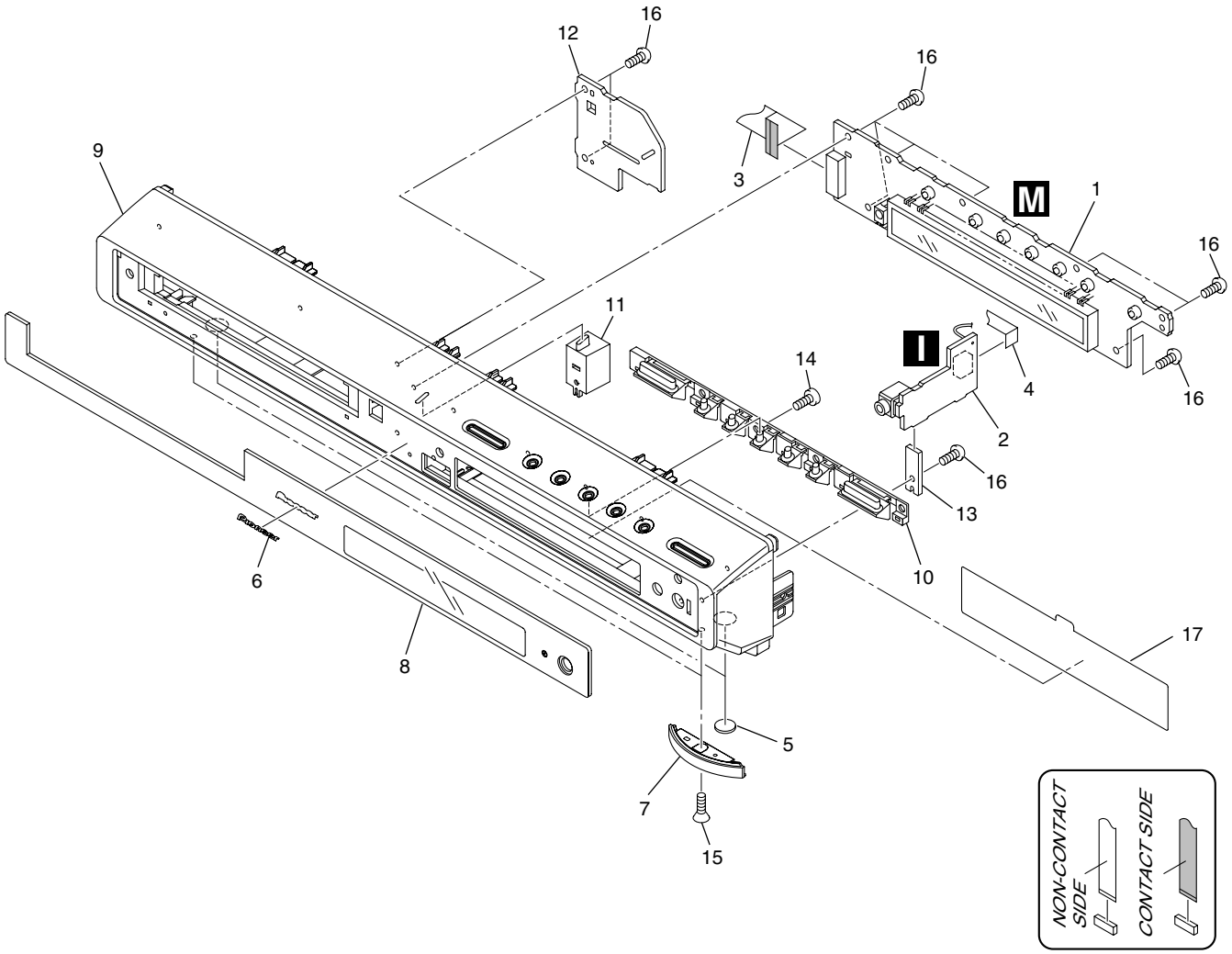
Mark	No.	Description	Part No.
	1	DVDM Assy	AWM7878
	2	DSP Assy	AWX8526
	3	6CH AMP	AZW7283
	4	FM/AM TUNER Unit	AXX7172
	5	CONTROL Assy	See Contrast table (2)
	6	TRADE3 Assy	XWZ3868
	7	TRADE2 Assy	XWX3071
	8	POWER Assy	XWZ3885
	9	TRADE1 Assy	XWZ3877
	10	VIDEO Assy	XWZ3875
NSP	11	DVD Assy	AXA7131
NSP	12	01 LOADER Assy	VWT1213
NSP	13	AMP Module 6ch	AXQ7254
⚠	14	Power Transformer (T1)	XTS3075
⚠	15	Fuse (FU1 : 6.3A)	REK1069
⚠	16	Fuse (FU2 : 6.3A)	REK1069
	17	30P F.F.C/60V	XDD3128
	18	18P F.F.C/60V	XDD3129
	19	11P F.F.C/60V	XDD3152
	20	5P F.F.C/60V	XDD3136
	21	•••••	
	22	Bonnet Case	XZN3153
NSP	23	Chassis	XNA3017
	24	Rear Panel	See Contrast table (2)
	25	Tray Cap Assy	XXG3179
	26	•••••	
	27	Control Angle	XNG3108
	28	DSP Holder	XNG3109
	29	•••••	
	30	•••••	
	31	DSP Barrier	XEC3056
	32	PCB Spacer	AEB7206
	33	S Cover	AEB7262
NSP	34	PCB Spacer (3x6)	AEC7156
	35	Locking Card Spacer	AEC7372
	36	Bottom Plate	AEC7420
	37	Barrier S	AEC7429
	38	Fan Cover	XMR3086
	39	Card Spacer	DNK2769
NSP	40	Spacer	PNY-404
	41	Cushion Rubber	XEB3036
	42	Connector Assy	PG05KK-E25
	43	Cushion	AEB7267
	44	Adapter02 L	ANW7280
	45	Adapter02 R	ANW7281
	46	Screw	BPZ30P080FTC
	47	DC Fan Motor	AXM7025
	48	FET Bracket A	ANG7418
	49	Fan Plate	ANG7462
NSP	50	Heat Sink	ANH7166
	51	Screw	BBZ30P140FTC
	52	Screw	BBZ30P300FTC
	53	•••••	
	54	Name Label	See Contrast table (2)
NSP	55	Fuse Card	AAX2374
	56	Screw	BBZ30P060FTC
	57	Screw	BBZ30P080FNI
	58	Screw	BBZ40P060FTC
	59	Screw	VPZ30P100FTC
	60	Screw	CBZ30P080FTC
	61	Screw	VPZ30P140FTC
	62	Screw	VBZ30P080FTC
NSP	63	Energy Star Label	AAX8022
	64	Screw	BBZ30P040FTC

(2) CONTRAST TABLE

XV-DV740/KUCXJ and XV-DV440/KCXJ are constructed the same except for the following :

Mark	No.	Description	XV-DV740/KUCXJ	XV-DV440/KCXJ
	5	CONTROL Assy	XWZ3882	XWZ3896
	24	Rear Panel	XNC3298	XNC3320
	54	Name Label	XAX3456	XAX3479

2.3 FRONT PANEL SECTION



FRONT PANEL SECTION Parts List

Mark	No.	Description	Part No.
	1	DISPLAY Assy	XWZ3874
	2	HP Assy	XWZ3869
	3	15P F.F.C/60V	XDD3155
	4	5P F.F.C/60V	XDD3131
	5	Leg	AEB7090
	6	Pioneer Name Plate	VAM1136
	7	Foot	XMR3088
	8	Display Window	XAK3450
	9	Front Panel	See Contrast table (2)
	10	FUNC. Button	XAD3185
	11	Top Lens	XAK3453
	12	Support PCB	•••••
	13	Support PCB	•••••
	14	Screw	BPZ30P080FTC
	15	Screw	CBZ30P080FTC
	16	Screw	VPZ30P100FTC
	17	F.L Barrier	XEC3055

(2) CONTRAST TABLE

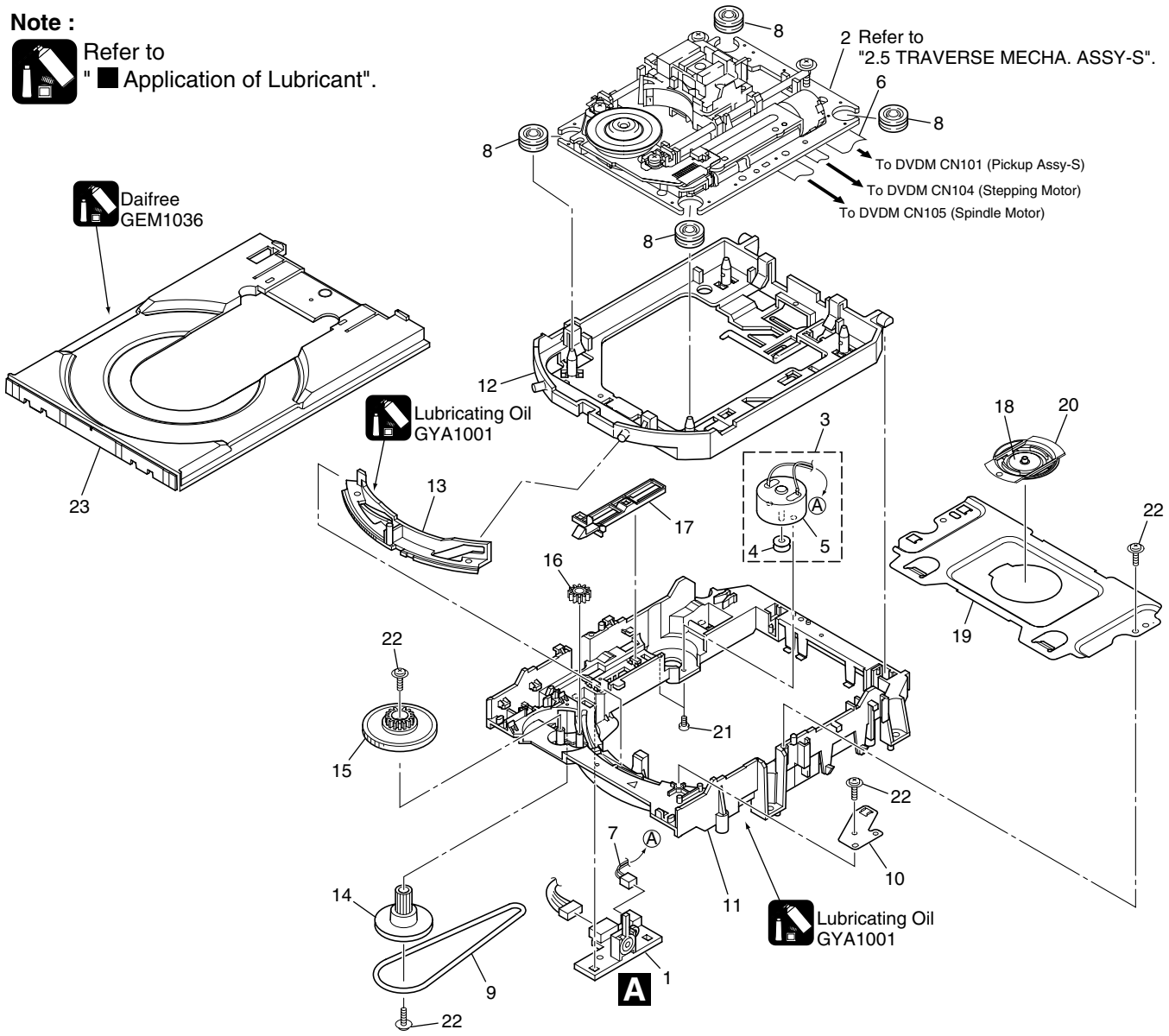
XV-DV740/KUCXJ and XV-DV440/KCXJ are constructed the same except for the following :

Mark	No.	Description	XV-DV740/KUCXJ	XV-DV440/KCXJ
	9	Front Panel	XMB3155	XMB3170

2.4 01 LOADER ASSY

Note :

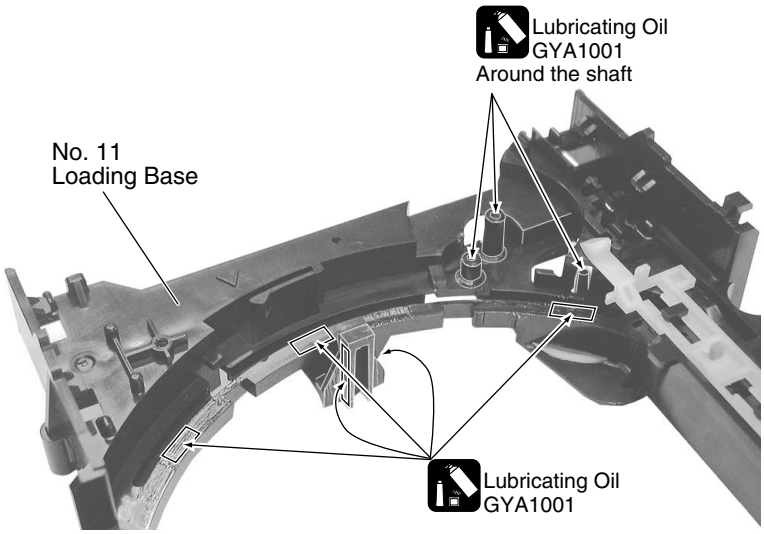
Refer to
" ■ Application of Lubricant".

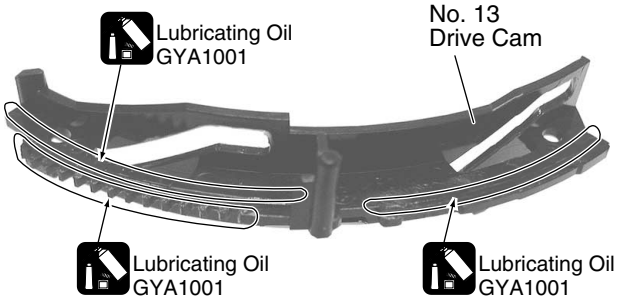


01 LOADER ASSY Parts List

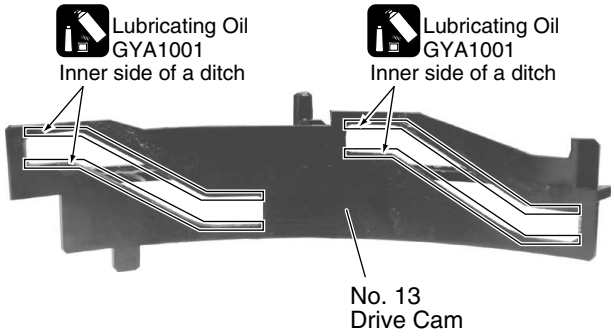
Mark	No.	Description	Part No.
NSP	1	LOAB Assy	VWG2346
	2	Traverse Mechanism Assy-S	VXX2909
	3	Loading Motor Assy	VXX2912
	4	Motor Pulley	PNW1634
NSP	5	Motor	VXM1107
	6	Flexible Cable (24P)	VDA1947
	7	Connector Assy 2P	VKP2253
	8	Floating Rubber	VEB1351
	9	Belt	VEB1330
	10	Stabilizer	VNE2253
	11	Loading Base	VNL1917
	12	Float Base DVD	VNL1918
	13	Drive Cam	VNL1919
	14	Gear Pulley	VNL1921
	15	Loading Gear	VNL1922
	16	Drive Gear	VNL1923
	17	SW Lever	VNL1925
	18	Clamper Plate	VNE2251
	19	Bridge	VNE2252
	20	Clamper	VNL1924
	21	Screw	JGZ17P028FTC
	22	Screw	VBA1094
	23	Tray	VNL1920

Application of Lubricant

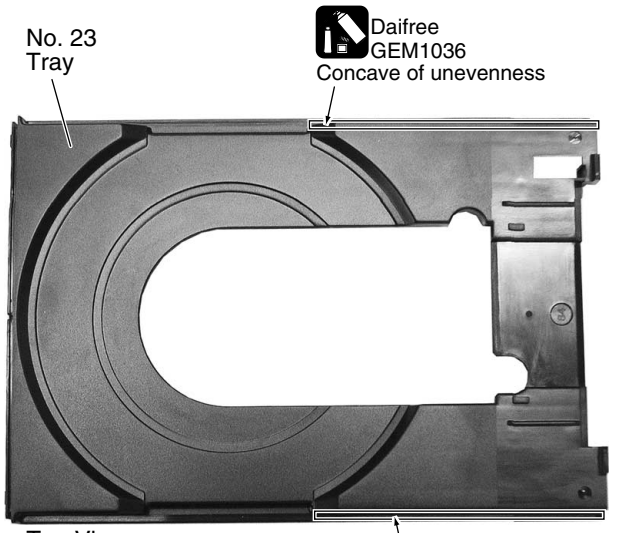




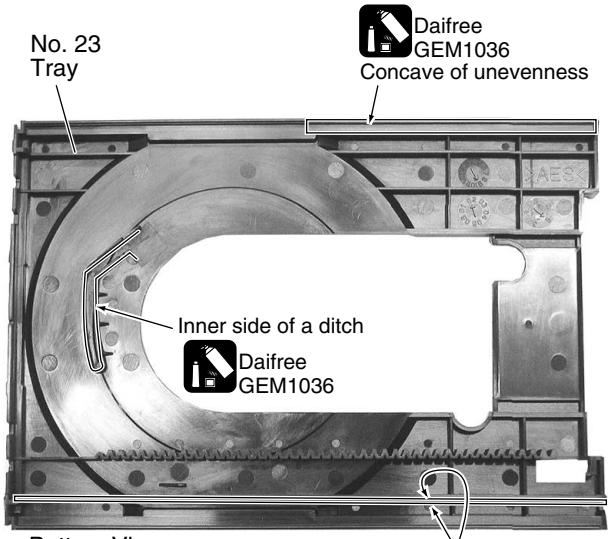
● Front View



● Rear View

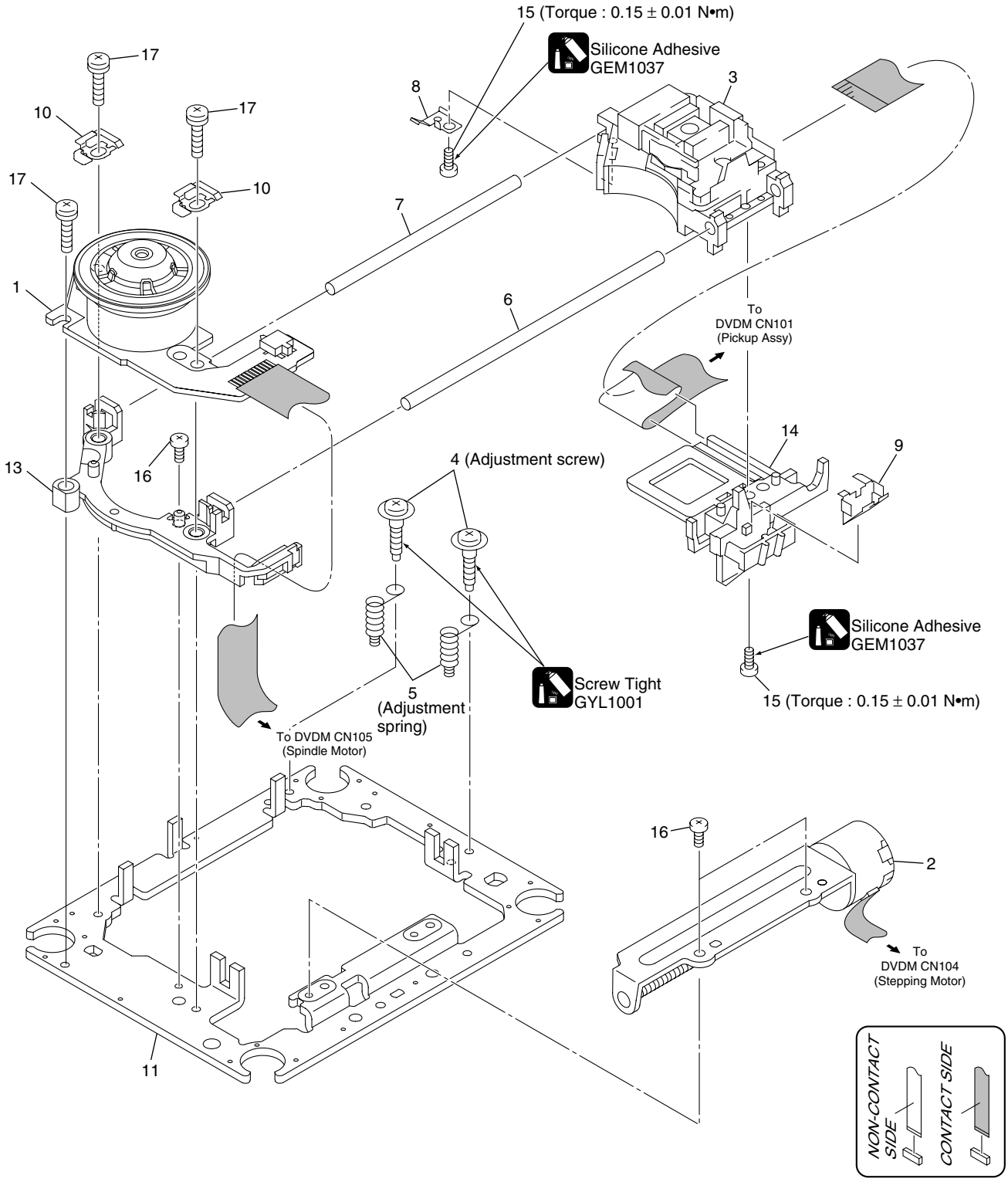


● Top View



● Bottom View

2.5 TRAVERSE MECHA ASSY-S

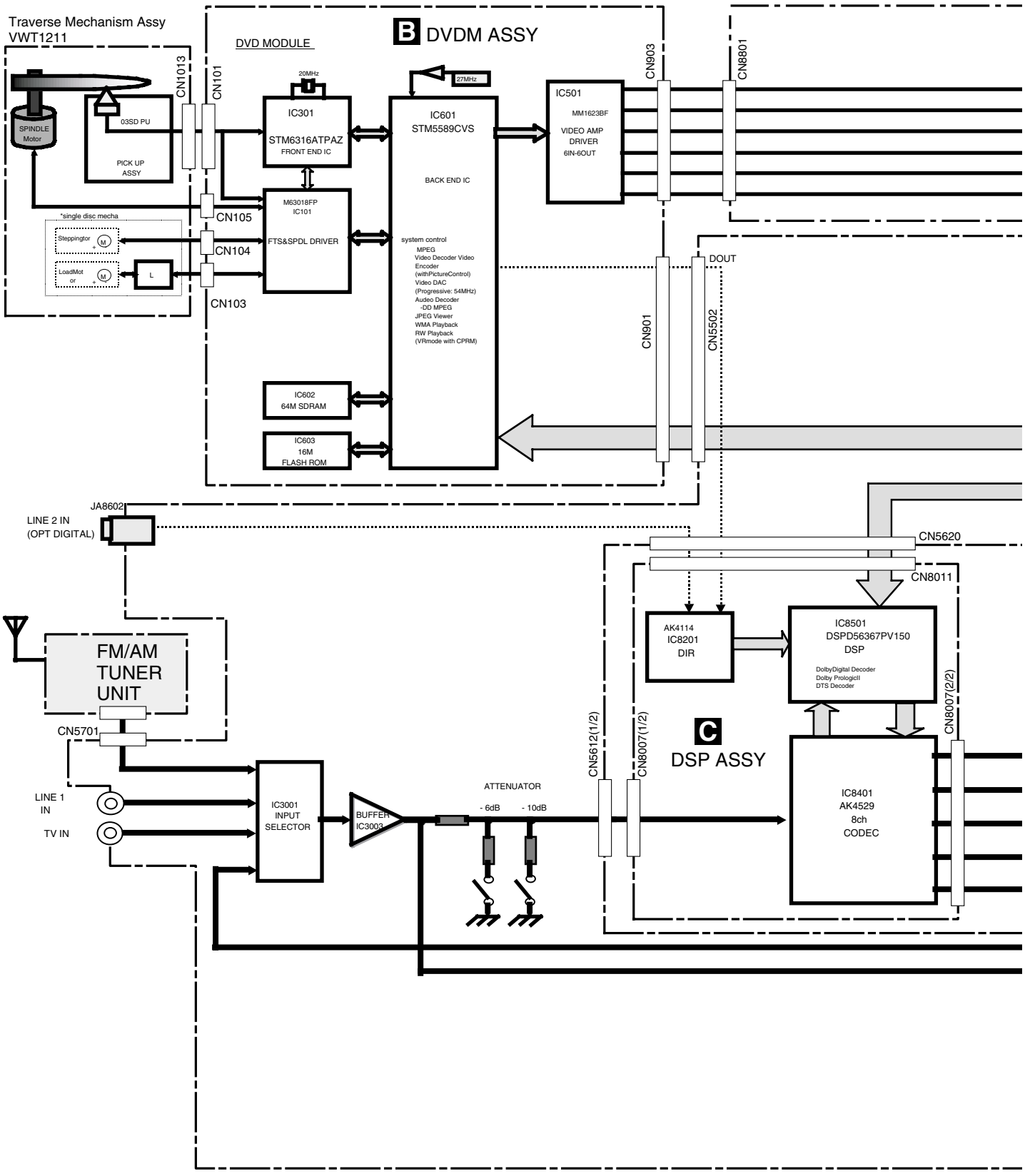


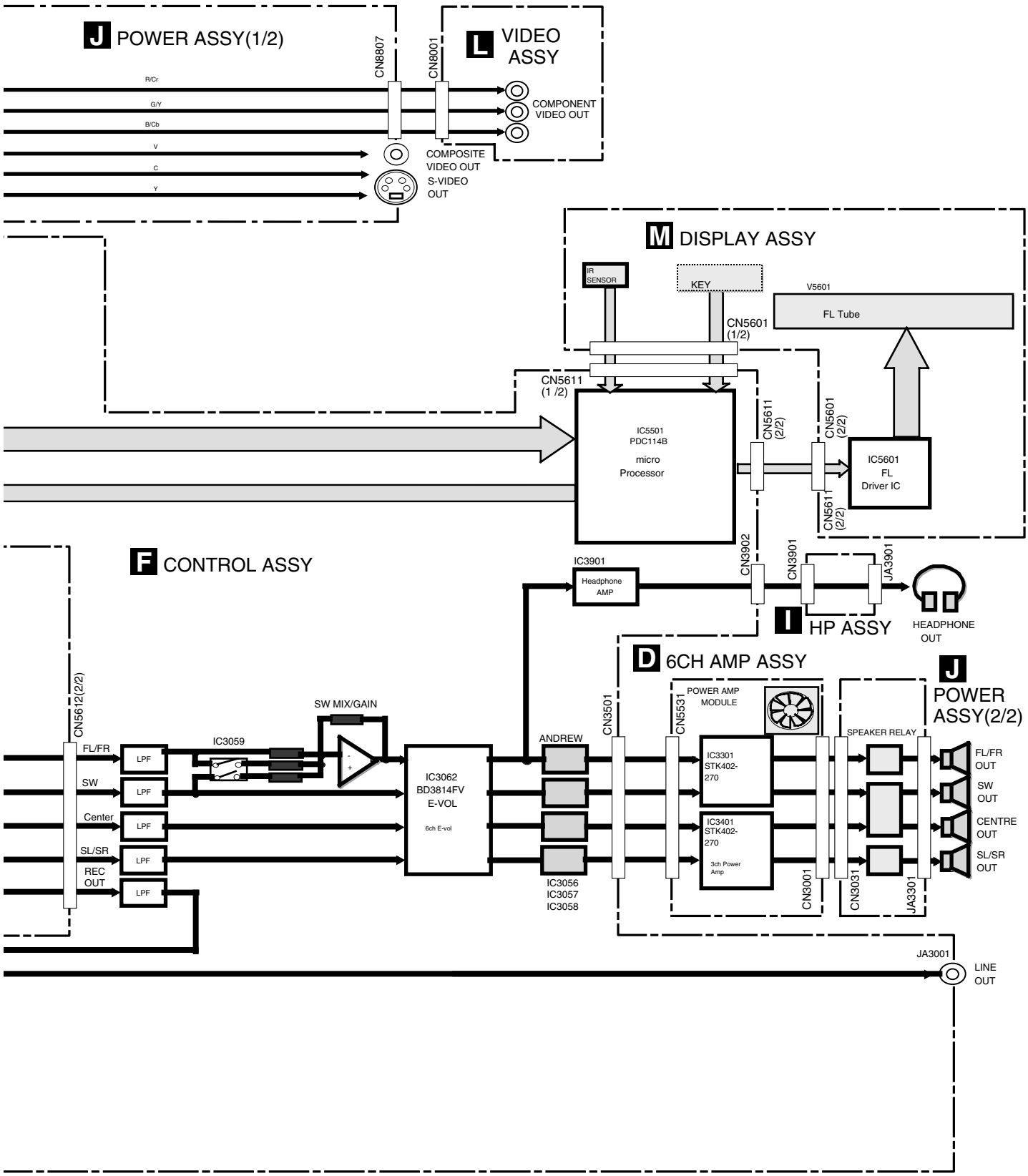
TRAVERSE MECHA ASSY-S Parts List

Mark	No.	Description	Part No.
	1	Spindle Motor	VXM1099
	2	Stepping Motor	VXM1101
⚠	3	Pickup Assy-S	OXX8005
	4	Skew Screw	VBA1080
	5	Skew Spring	VBH1335
	6	Guide Bar	VLL1514
	7	Sub Guide Bar	VLL1515
	8	Leaf Spring	VNC1023
	9	Joint Spring	VNC1019
	10	Support Spring	VNC1020
NSP	11	Mechanism Chassis	VNE2248
	12	••••••	
	13	Spacer	VNL1913
	14	Joint 03	VNL1949
	15	Tapping Screw	VBA1092
	16	Screw	BBZ20P050FTC
	17	Screw	PMA26P100FTC

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

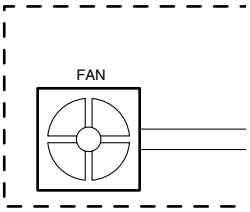
3.1 BLOCK DIAGRAM

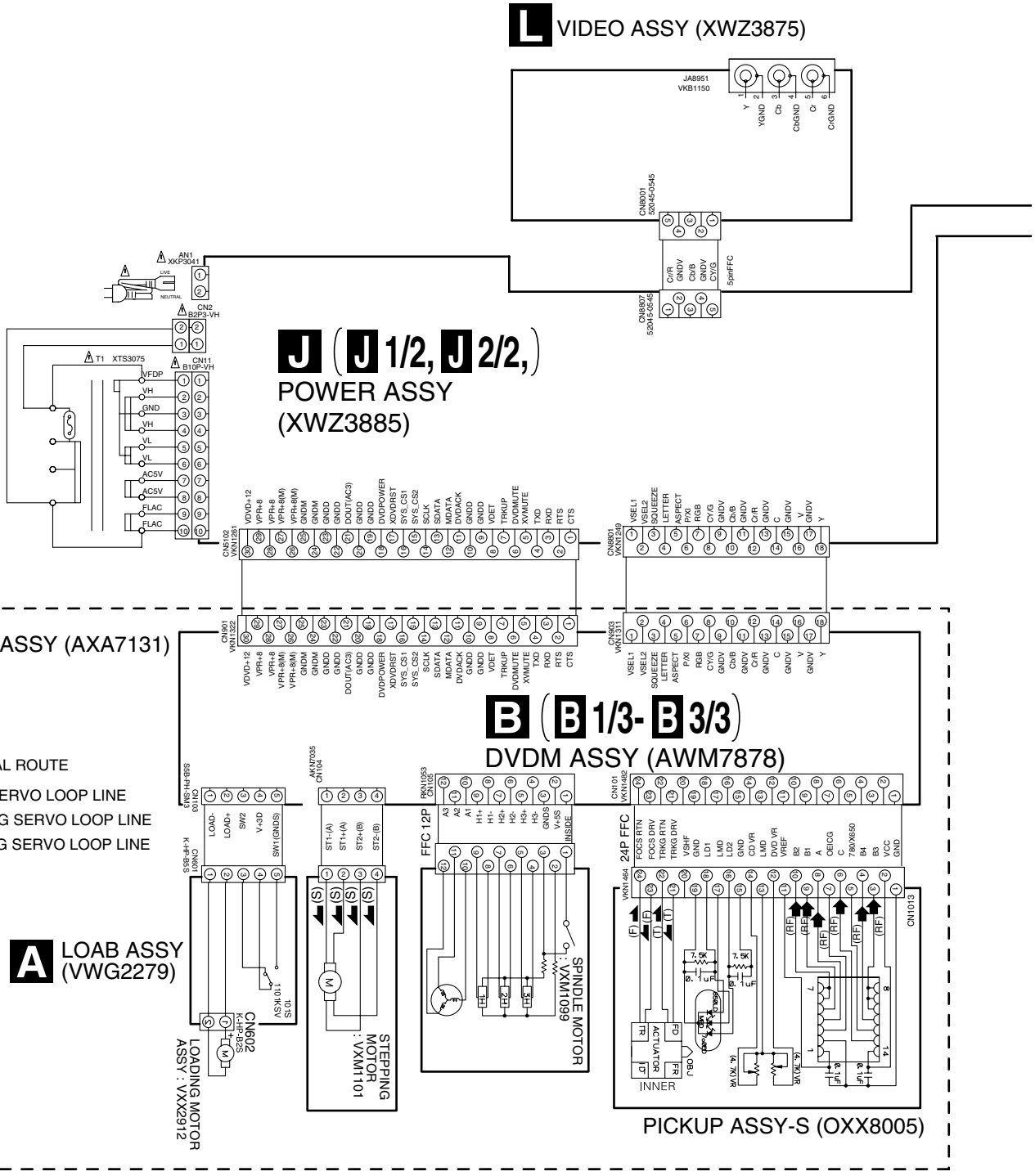


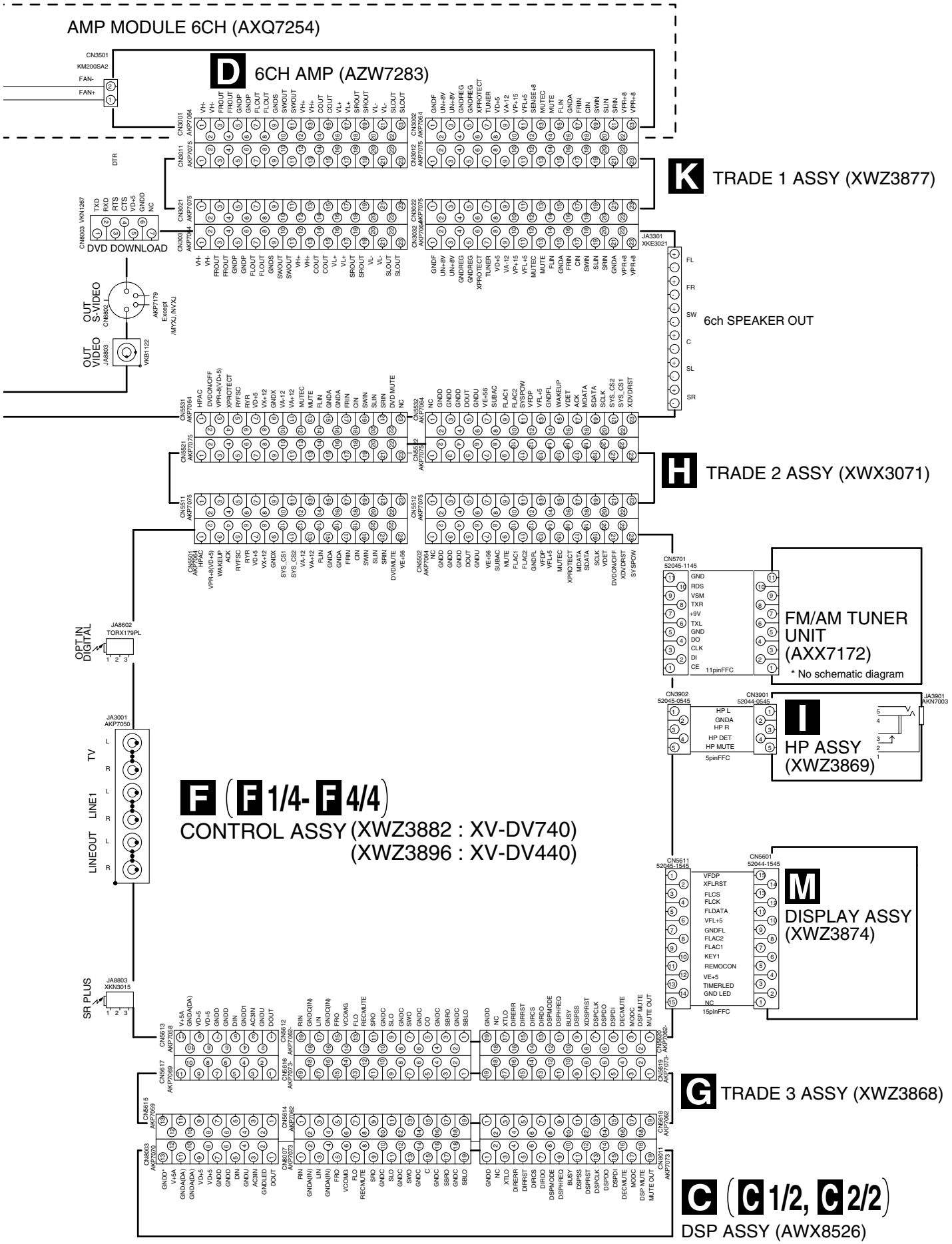

J POWER ASSY(1/2)
CN8807
CN8001
L VIDEO ASSY
R/Cr
G/Y
B/Cb
V
C
Y
COMPONENT VIDEO OUT
COMPOSITE VIDEO OUT
S-VIDEO OUT
M DISPLAY ASSY
IR SENSOR
KEY
V5601
FL Tube
CN5601 (1/2)
CN5611 (1 /2)
IC5501 PDC114B micro Processor
CN5611 (2/2)
CN5601 (2/2)
IC5601 FL Driver IC
CN5611 (2/2)
F CONTROL ASSY
IC3901 Headphone AMP
CN3902
CN3901
JA3901
I HP ASSY
HEADPHONE OUT
D 6CH AMP ASSY
J POWER ASSY(2/2)
CN5612(2/2)
SW MIX/GAIN
IC3059
FL/FR
SW
Center
SL/SR
REC OUT
LPF
IC3062 BD3814FV E-VOL
6ch E-vol
ANDREW
CN3501
POWER AMP MODULE
CN5531
IC3301 STK402-270
IC3401 STK402-270
3ch Power Amp
SPEAKER RELAY
CN3001
CN3031
JA3301
IC3056 IC3057 IC3058
FL/FR OUT
SW OUT
CENTRE OUT
SL/SR OUT
JA3001
LINE OUT

3.2 LOAB ASSY and OVERALL WIRING DIAGRAM

NOTES: • *When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".*
• *The > mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
• *: The power supply is shown with the marked box.*

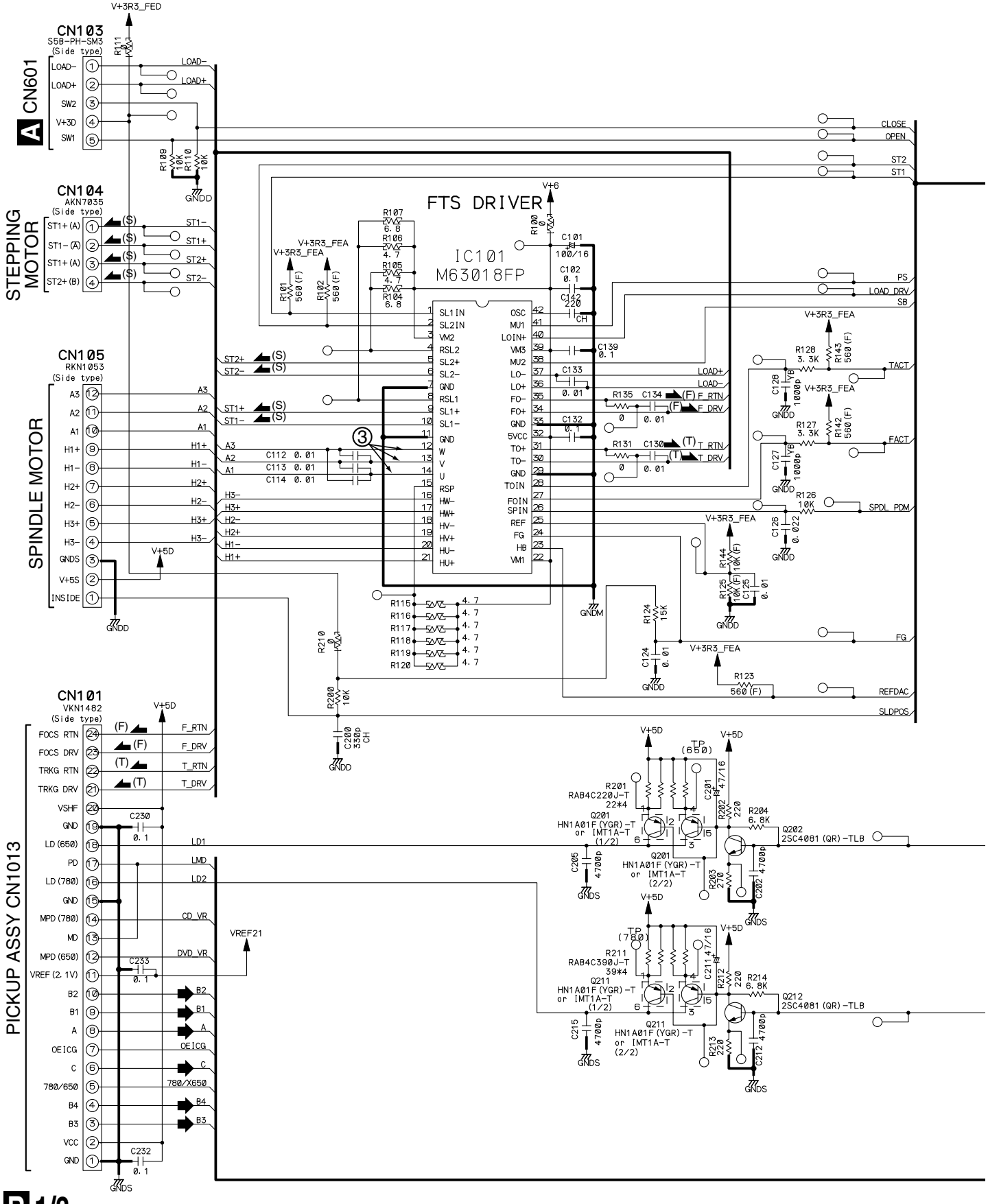





AMP MODULE 6CH (AXQ7254)
D 6CH AMP (AZW7283)
K TRADE 1 ASSY (XWZ3877)
H TRADE 2 ASSY (XWX3071)
F (F 1/4- F 4/4)
CONTROL ASSY (XWZ3882 : XV-DV740)
(XWZ3896 : XV-DV440)
G TRADE 3 ASSY (XWZ3868)
C (C 1/2, C 2/2)
DSP ASSY (AWX8526)
I HP ASSY (XWZ3869)
M DISPLAY ASSY (XWZ3874)
FM/AM TUNER UNIT (AXX7172)
* No schematic diagram
6ch SPEAKER OUT
DVD DOWNLOAD
OUT S-VIDEO
OUT VIDEO
OPT IN DIGITAL
SR PLUS
LINEOUT LINE1 TV

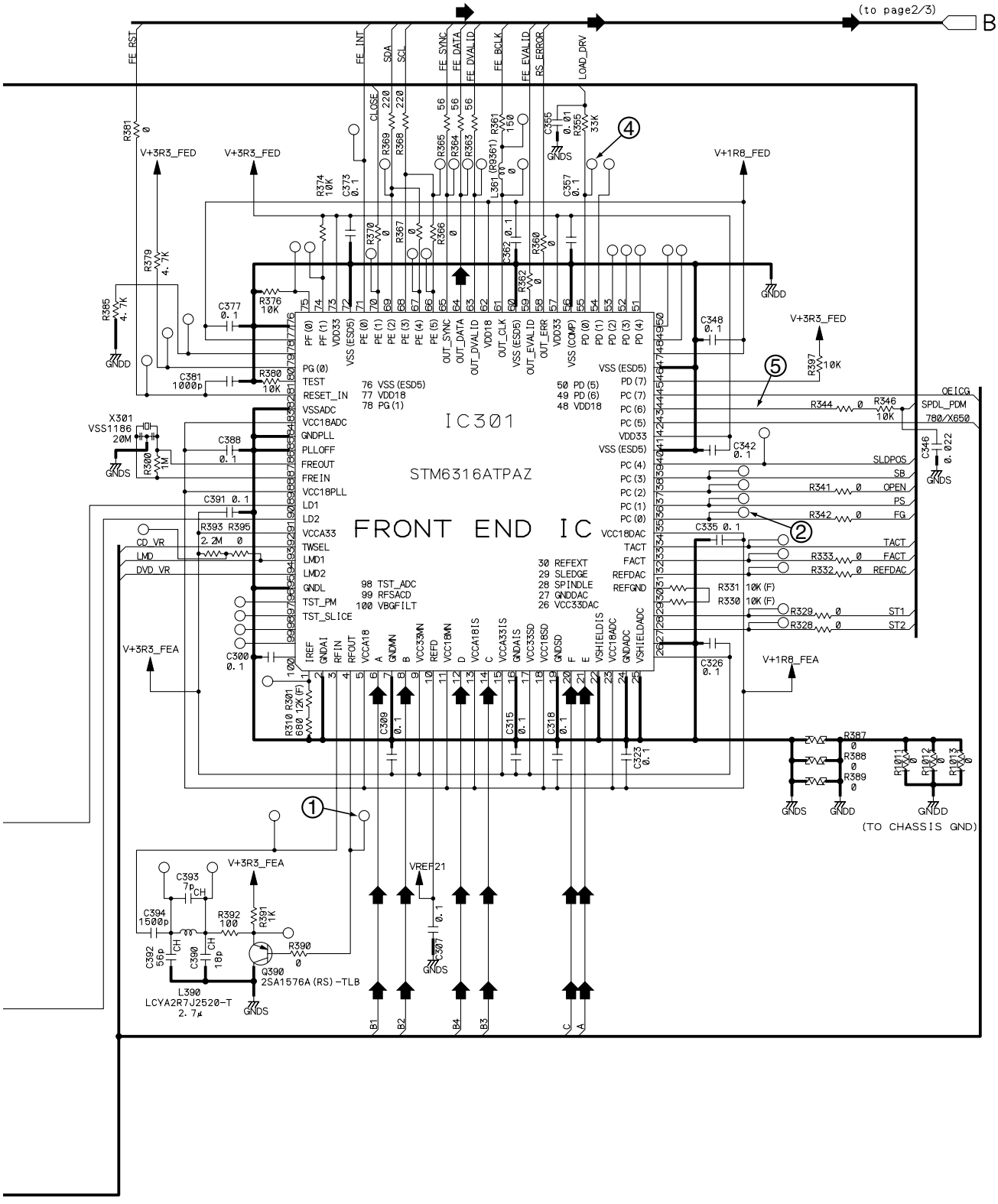
3.3 DVDM ASSY(1/3)

B 1/3 DVDM ASSY (AWM7878)

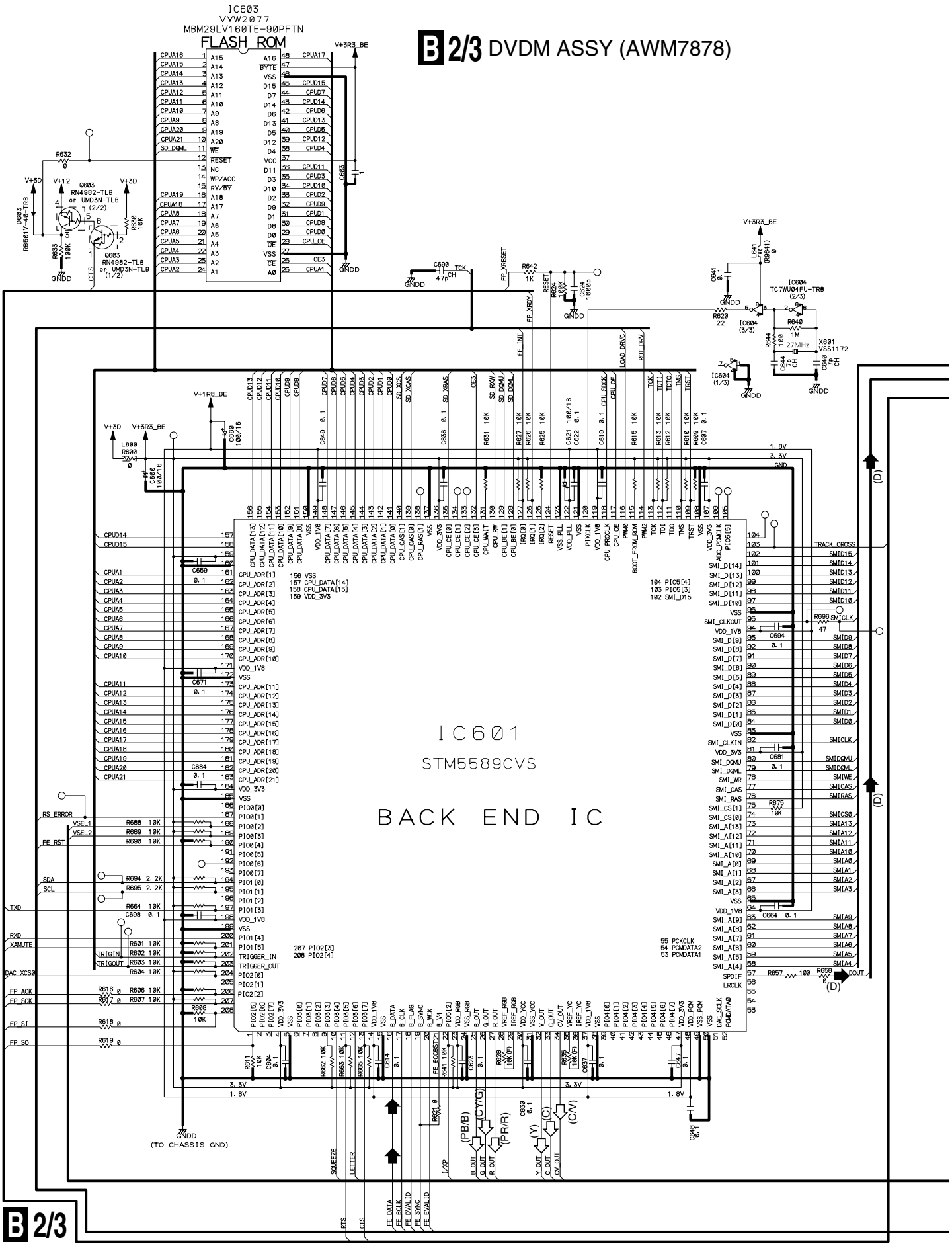


B 1/3

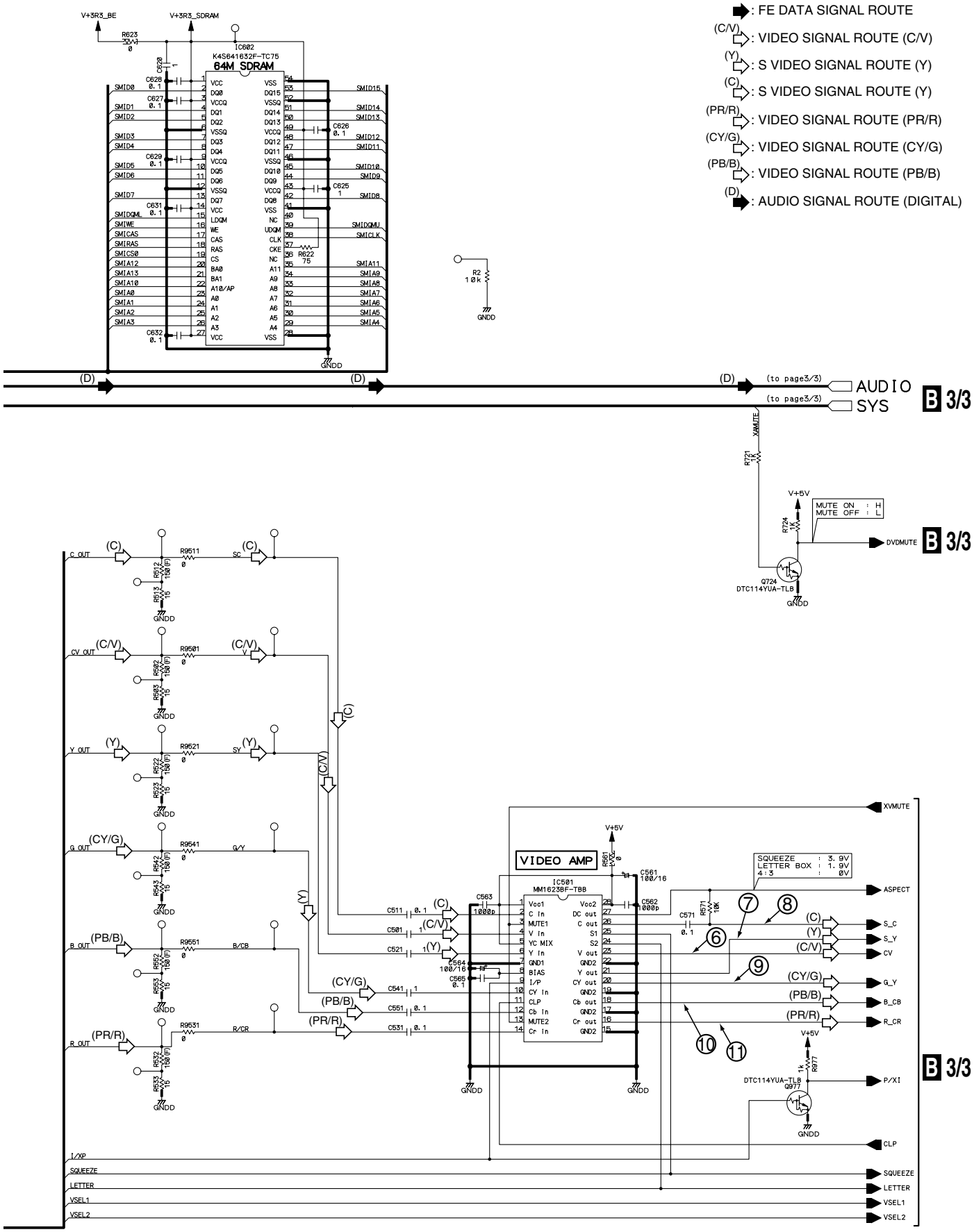
: FE DATA SIGNAL ROUTE
(F): FOCUS SERVO LOOP LINE
(T): TRACKING SERVO LOOP LINE
(S): STEPPING SERVO LOOP LINE



3.4 DVDM ASSY(2/3)

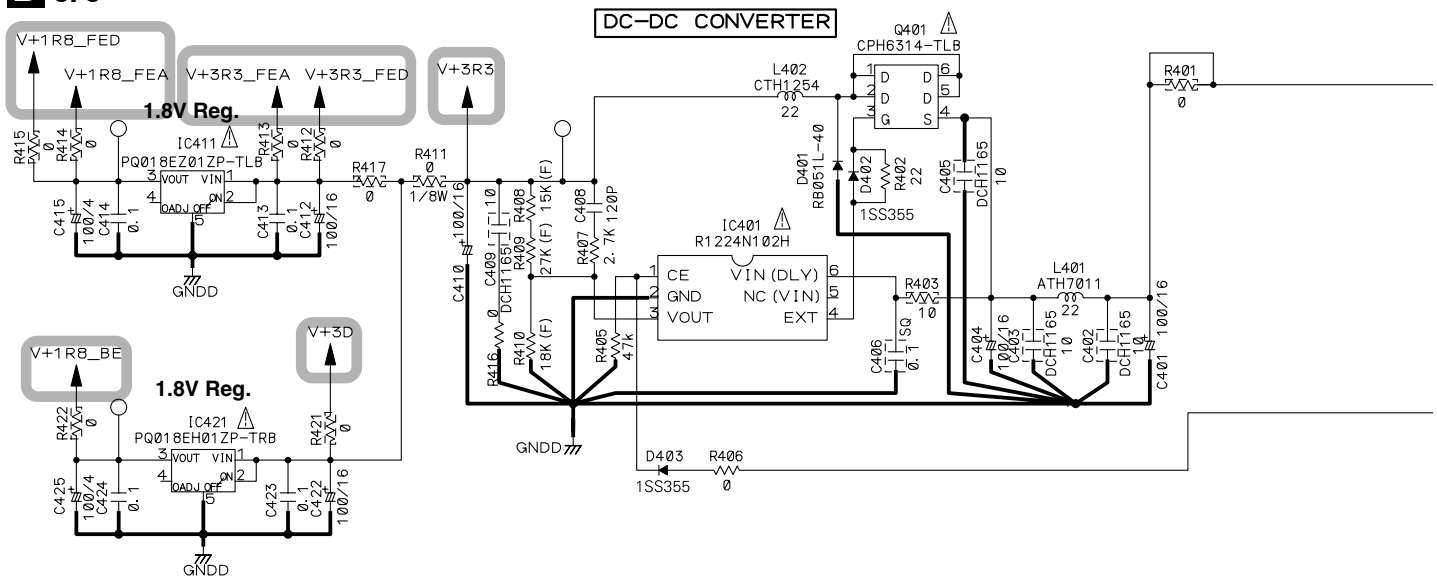


: FE DATA SIGNAL ROUTE
(C/V): VIDEO SIGNAL ROUTE (C/V)
(Y): S VIDEO SIGNAL ROUTE (Y)
(C): S VIDEO SIGNAL ROUTE (Y)
(PR/R): VIDEO SIGNAL ROUTE (PR/R)
(CY/G): VIDEO SIGNAL ROUTE (CY/G)
(PB/B): VIDEO SIGNAL ROUTE (PB/B)
(D): AUDIO SIGNAL ROUTE (DIGITAL)

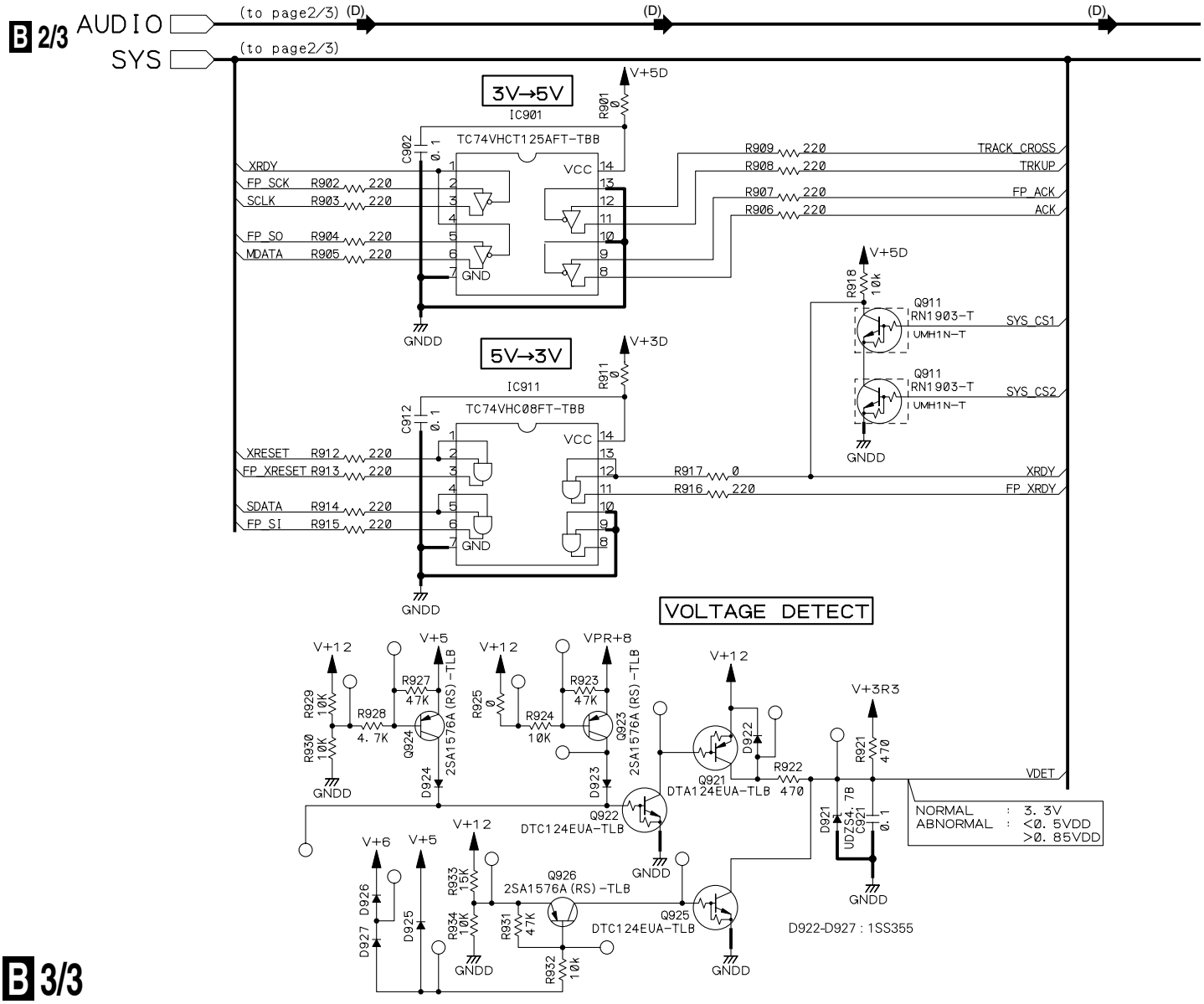


3.5 DVDM ASSY(3/3)

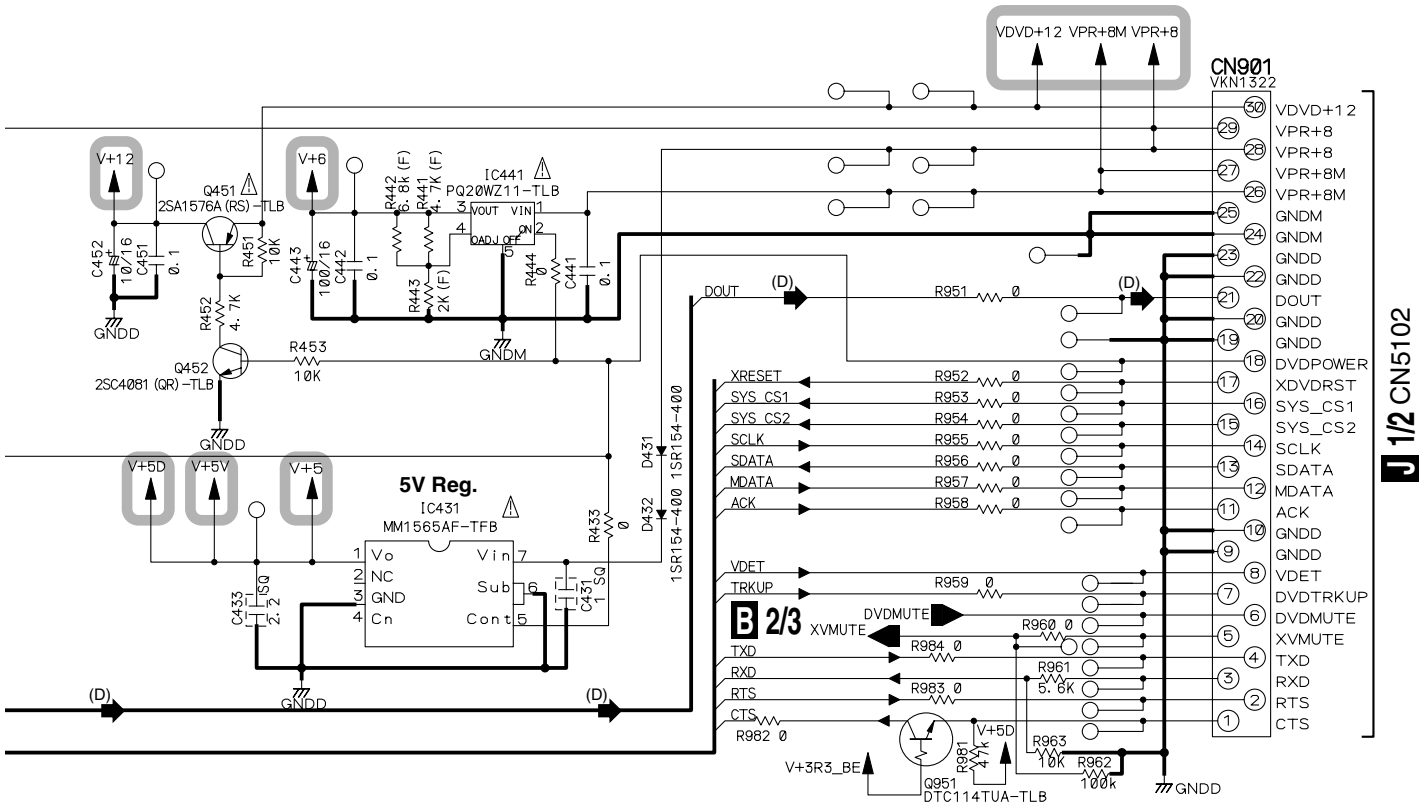
B 3/3 DVDM ASSY (AWM7878)

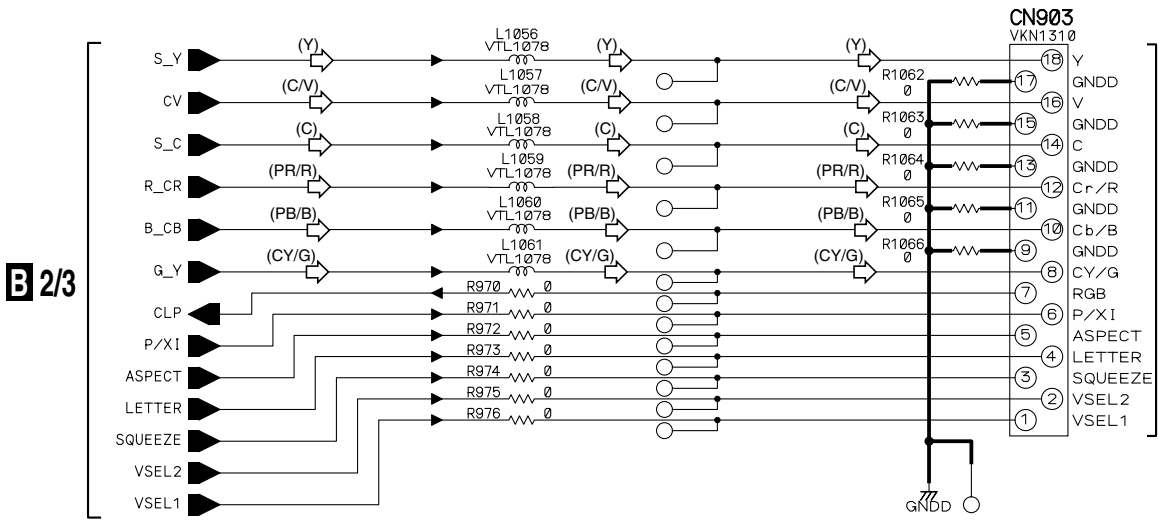


B 2/3 AUDIO SYS



B 3/3





(C/V): VIDEO SIGNAL ROUTE (C/V)

(Y): S VIDEO SIGNAL ROUTE (Y)

(C): S VIDEO SIGNAL ROUTE (Y)

(PR/R): VIDEO SIGNAL ROUTE (PR/R)

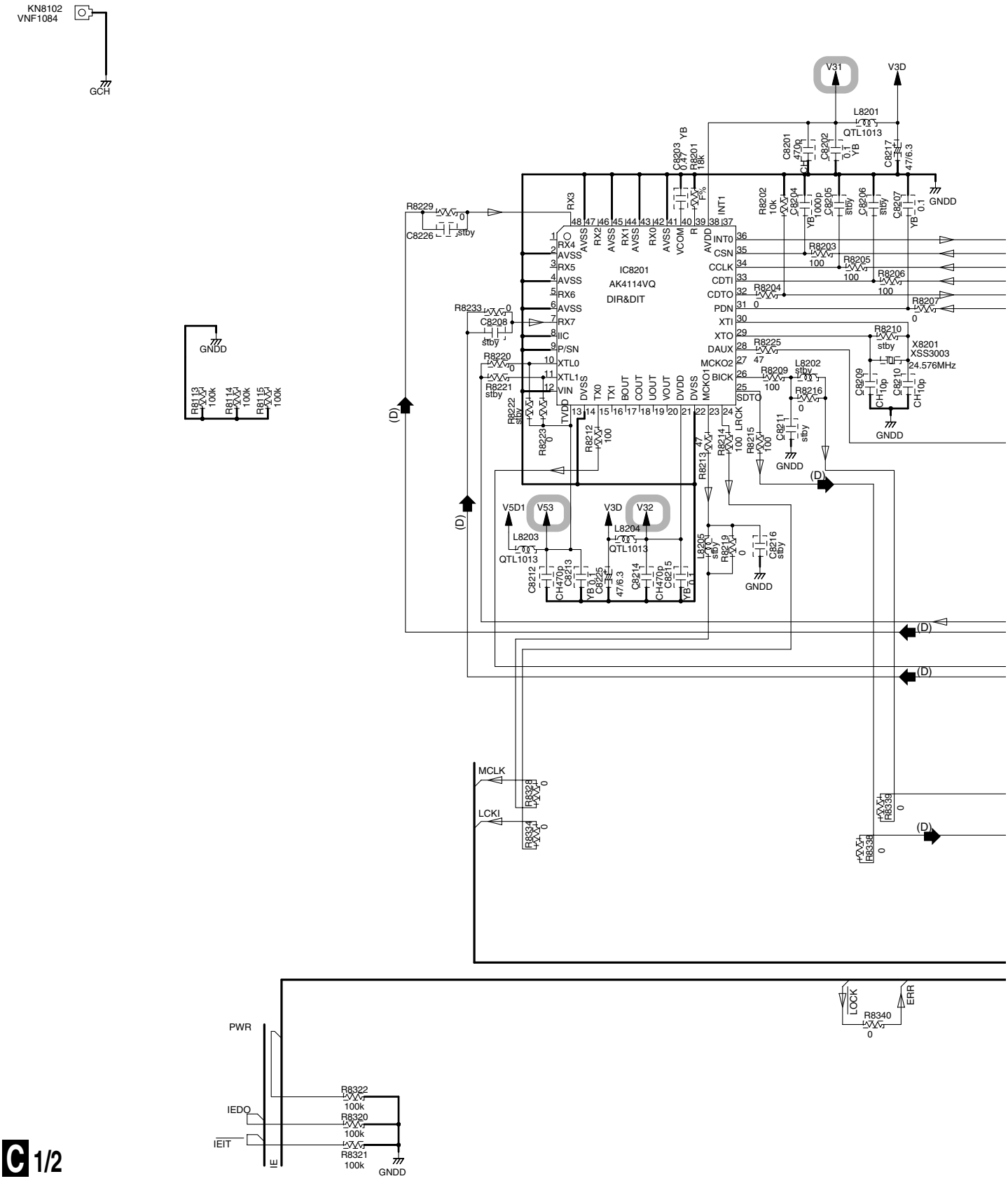
(CY/G): VIDEO SIGNAL ROUTE (CY/G)

(PB/B): VIDEO SIGNAL ROUTE (PB/B)

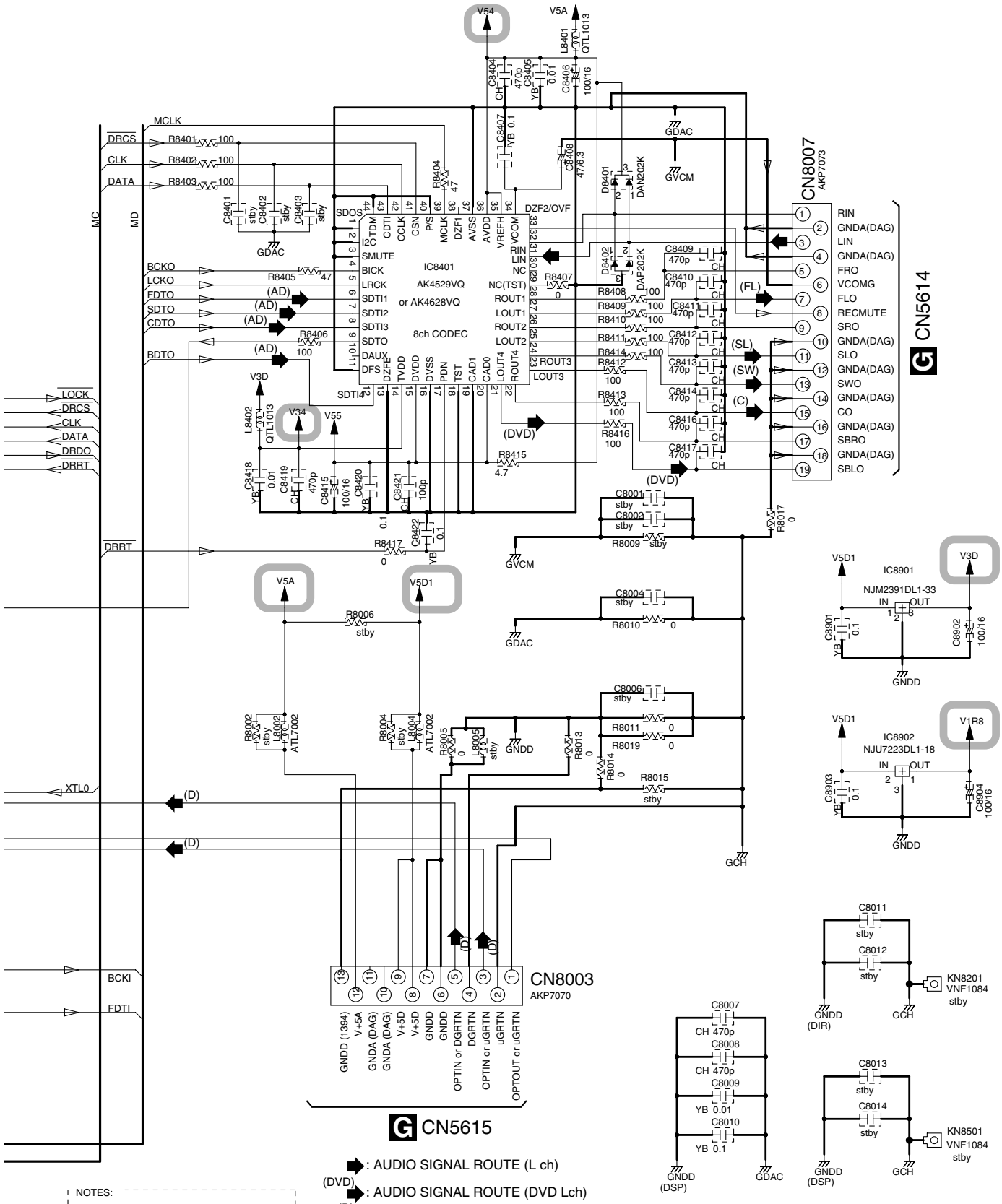
(D): AUDIO SIGNAL ROUTE (DIGITAL)

B 3/3

3.6 DSP ASSY (1/2)



C 1/2



NOTES:

NO INDICATED PARTS IS...

CCSRCH****50-T
CKSRYB****50-T
CKSRYB333K16-T
CKSRYB104K16-T
CKSRYB105K6R3-T

CEV***M***-T

RS1/16S***J-T

UNLESS OTHERWISE NOTED

→ : AUDIO SIGNAL ROUTE (L ch)

(DVD) → : AUDIO SIGNAL ROUTE (DVD Lch)

(D) → : AUDIO SIGNAL ROUTE (DIGITAL)

(AD) → : AUDIO DATA SIGNAL ROUTE

(FL) → : AUDIO SIGNAL ROUTE (Front L ch)

(SL) → : AUDIO SIGNAL ROUTE (Surround L ch)

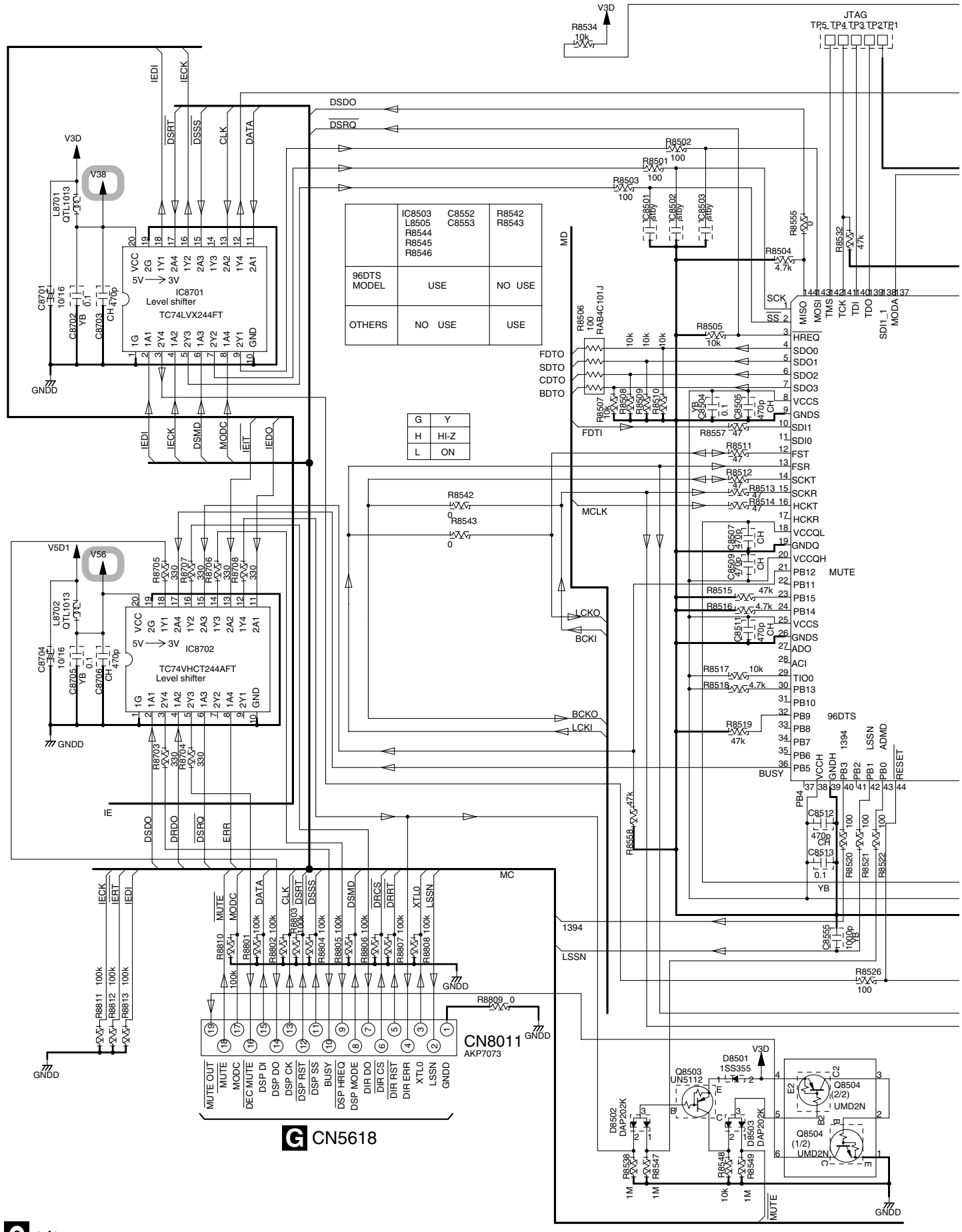
(C) → : AUDIO SIGNAL ROUTE (Center ch)

(SW) → : AUDIO SIGNAL ROUTE (Sub Woofer ch)

C 1/2 DSP ASSY (AWX8526)

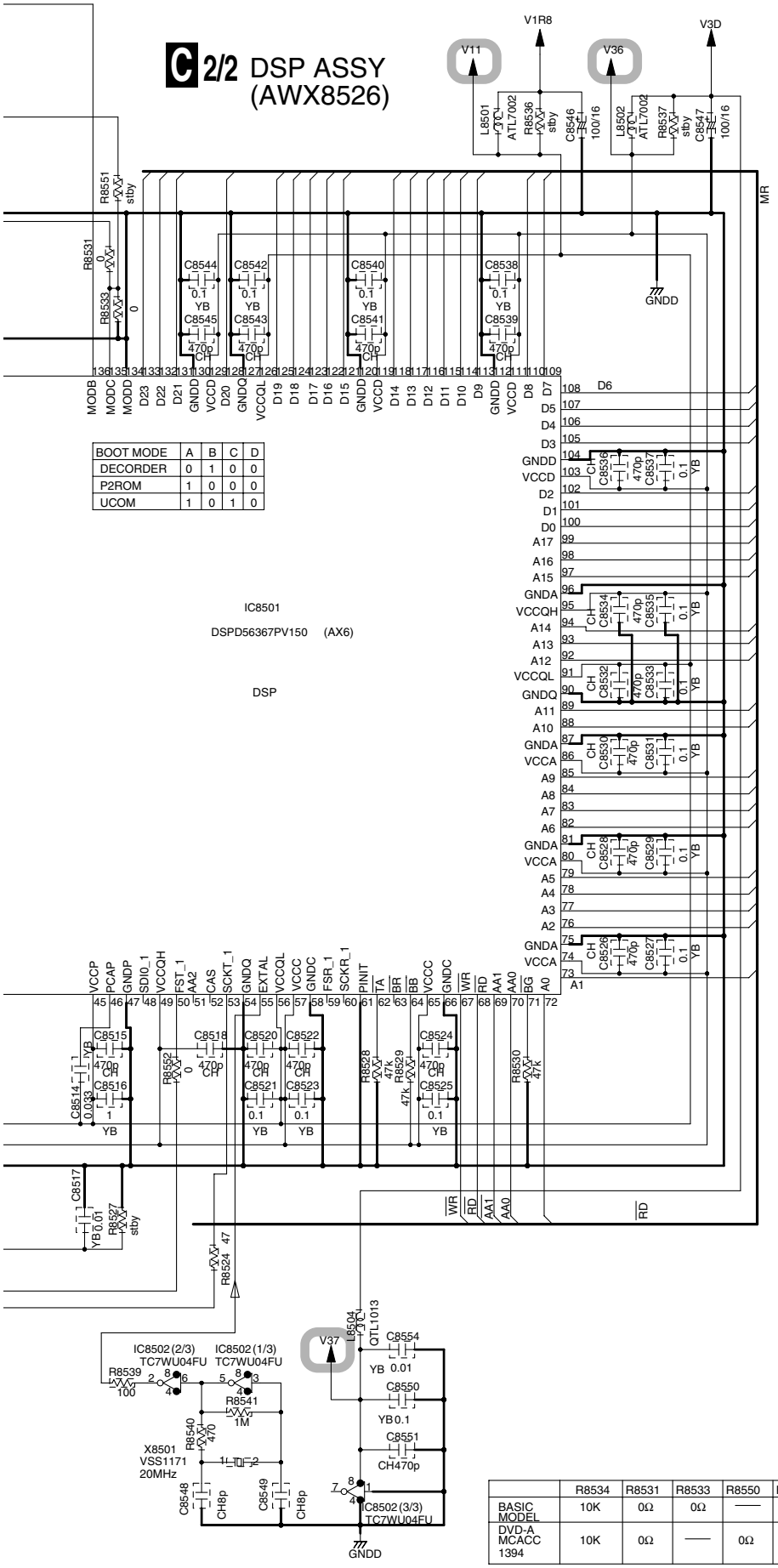
C 1/2

3.7 DSP ASSY (2/2)



C 2/2

C 2/2 DSP ASSY (AWX8526)



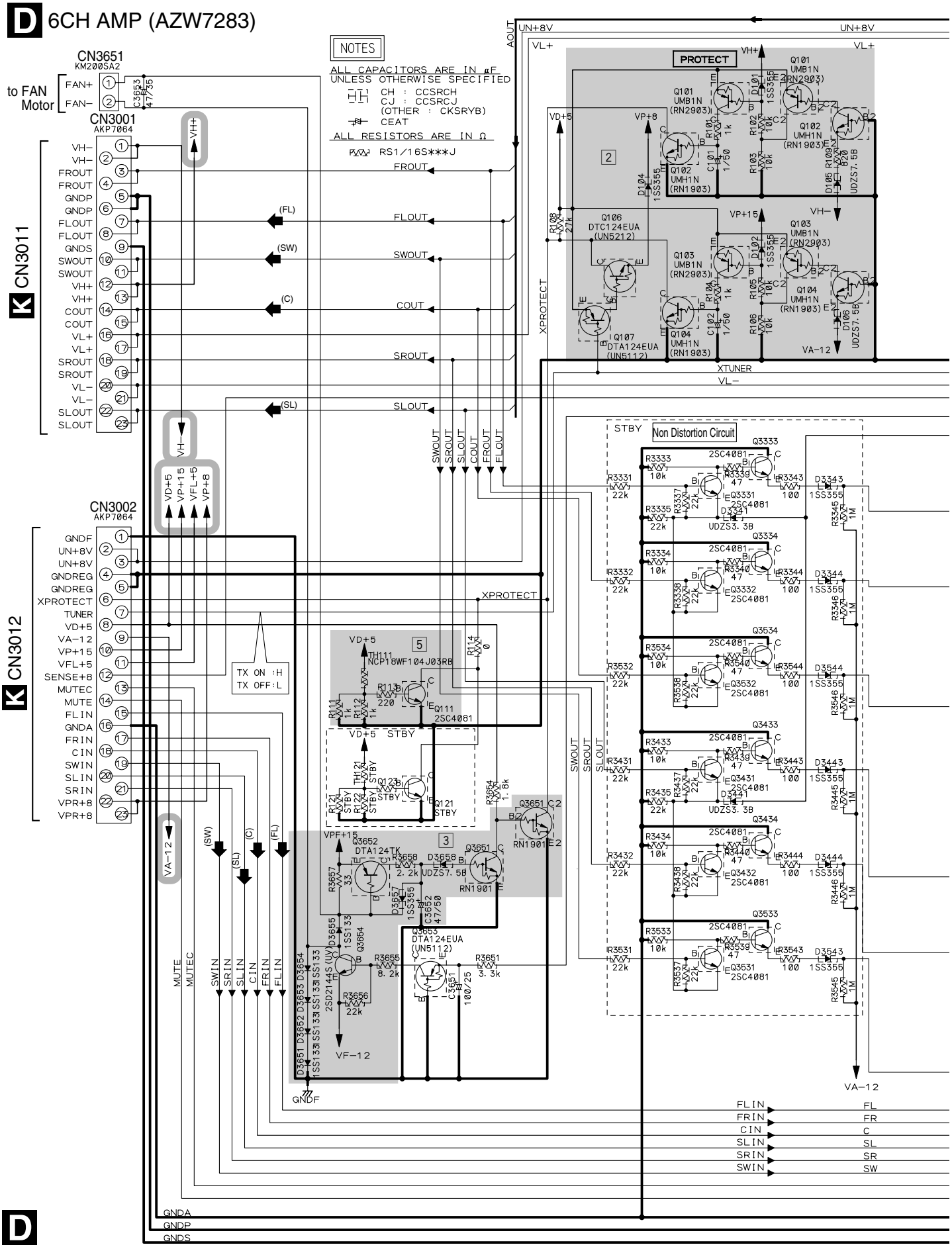
BOOT MODE	A	B	C	D
DECORDER	0	1	0	0
P2ROM	1	0	0	0
UCOM	1	0	1	0

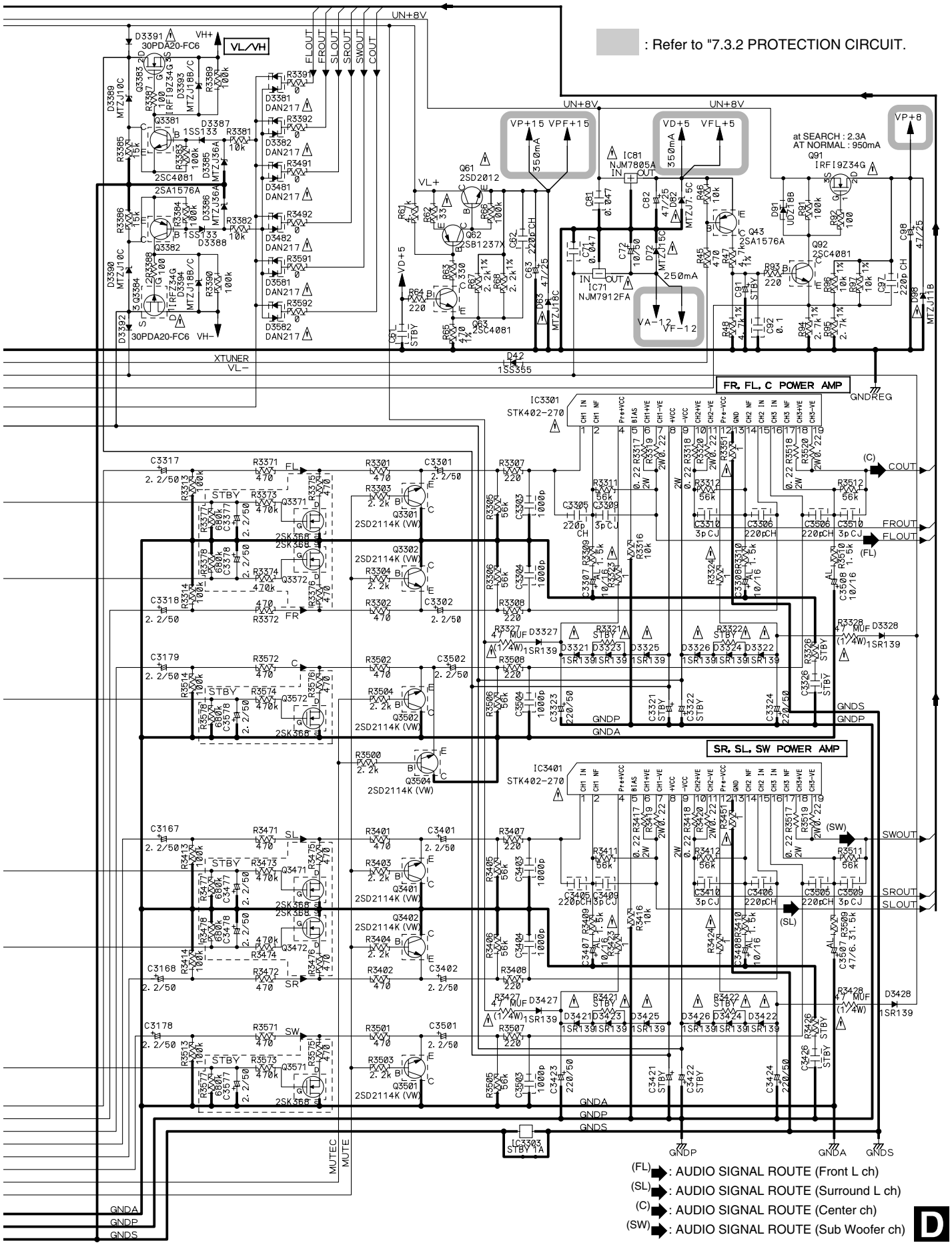
	IC8601 C8601 C8602 C8603 C8604 L8601	IC8602 C8605 C8606 C8607 C8608 L8602	IC8603 C8609 C8610 L8603	R8523
BASIC MODEL	NO USE	NO USE	NO USE	NO USE
AAC&96DTS	USE	USE	NO USE	USE
MCACC	USE	NO USE	USE	USE
AAC&96DTS &MCACC	USE	USE	USE	USE

	R8534	R8531	R8533	R8550	R8551	Q8501
BASIC MODEL	10K	0Ω	0Ω	—	—	—
DVD-A MCACC 1394	10K	0Ω	—	0Ω	—	UN5212

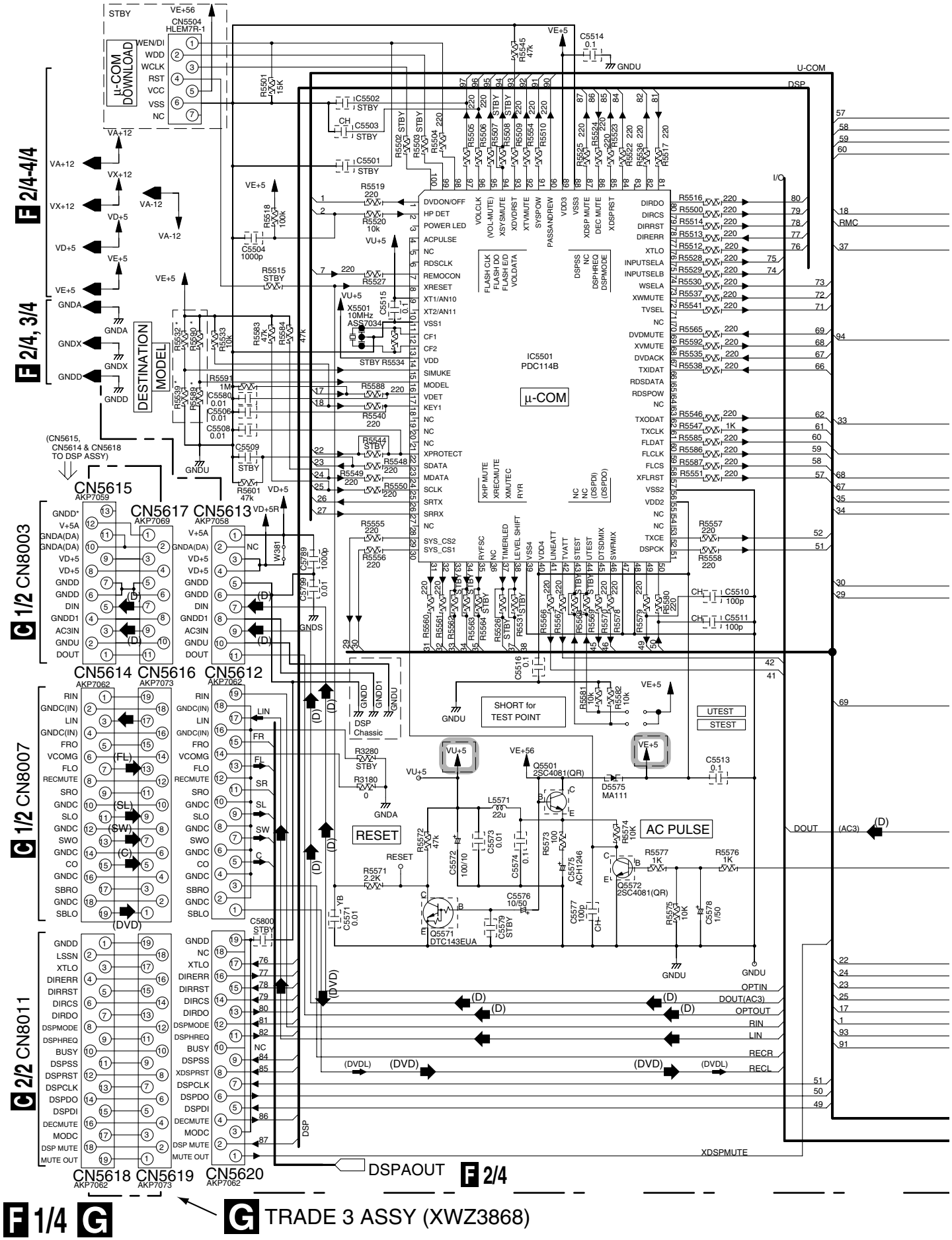
3.8 6CH AMP ASSY

D 6CH AMP (AZW7283)




: Refer to "7.3.2 PROTECTION CIRCUIT.
FR, FL, C POWER AMP
SR, SL, SW POWER AMP
(FL): AUDIO SIGNAL ROUTE (Front L ch)
(SL): AUDIO SIGNAL ROUTE (Surround L ch)
(C): AUDIO SIGNAL ROUTE (Center ch)
(SW): AUDIO SIGNAL ROUTE (Sub Woofer ch)

3.9 CONTROL(1/4), TRADE3 and TRADE2 ASSYS



F 1/4 CONTROL ASSY

(XWZ3882 : XV-DV740)
(XWZ3896 : XV-DV440)

: AUDIO SIGNAL ROUTE (L ch)
(DVD) : AUDIO SIGNAL ROUTE (DVD Lch)
(D) : AUDIO SIGNAL ROUTE (DIGITAL)
(FL) : AUDIO SIGNAL ROUTE (Front L ch)
(SL) : AUDIO SIGNAL ROUTE (Surround L ch)
(C) : AUDIO SIGNAL ROUTE (Center ch)
(SW) : AUDIO SIGNAL ROUTE (Sub Woofer ch)

NOTES

ALL CAPACITORS ARE IN µF
UNLESS OTHERWISE SPECIFIED
CH : CCSRCH
(OTHER : CKSRYB)
AL : CEAL
(OTHER : CEAT)

ALL RESISTORS ARE IN Ω
RS1/16S***J

ALL INDUCTORS ARE IN µH
LFEA***J

: Refer to "7.3.2 PROTECTIN CIRCUIT."

M CN5601 — to DISPLAY ASSY CN5601

CN5611 52045-1545

MUTE INVERTER

H TRADE 2 ASSY (XWX3071)

CN5501 AKP7064 | CN5511 AKP7075 | CN5521 AKP7075

CN5502 AKP7064 | CN5512 AKP7075 | CN5522 AKP7075

J 1/2 CN5531 from POWER ASSY CN5531

J 1/2 CN5532 from POWER ASSY CN5532

Destination	KUCXJ/KCXJ
R5532	47k
R5539	—

MODEL	XV-DV440/740
R5590	—
R5589	47k

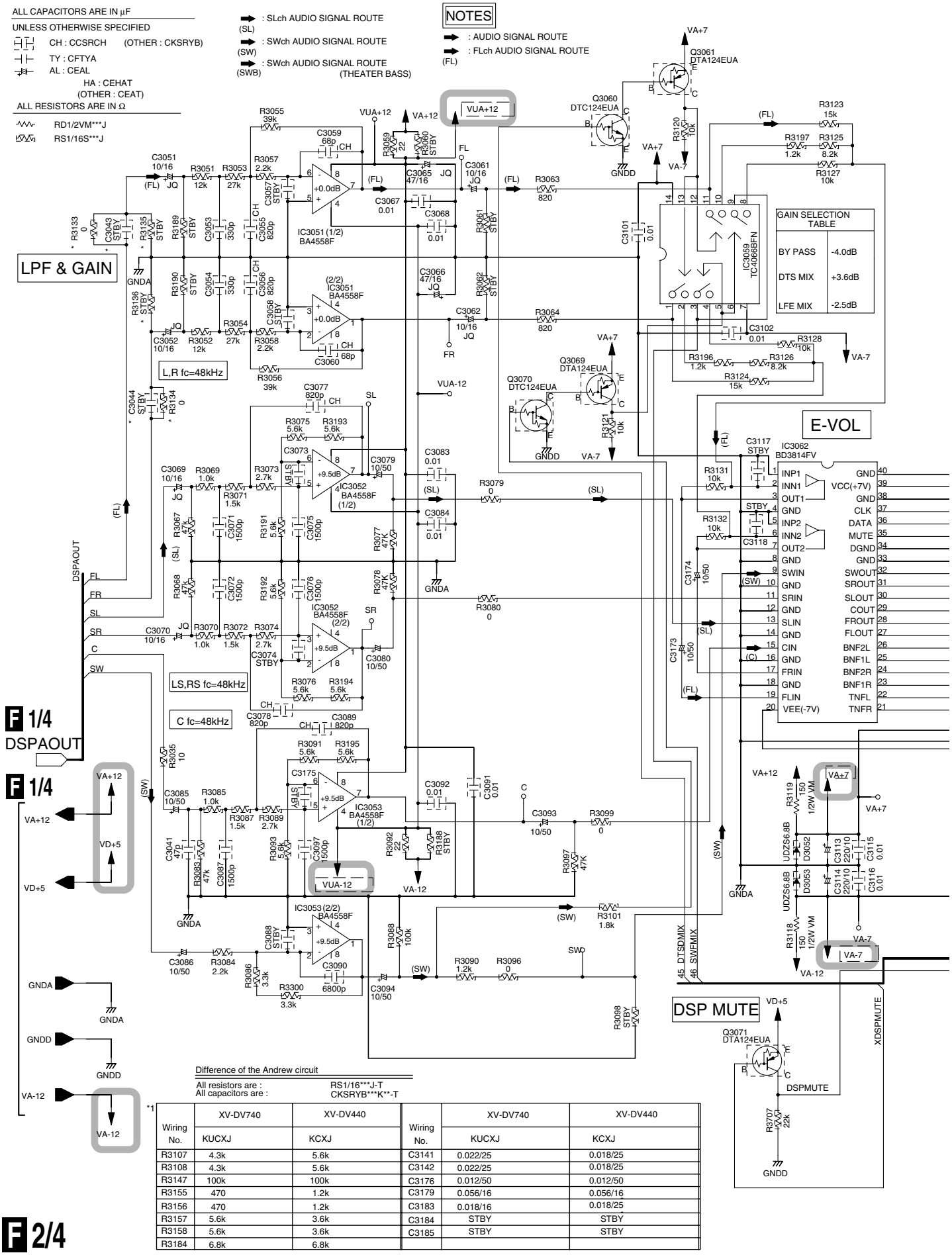
F 2/4

F 2/4-4/4

F 3/4, 4/4

F 1/4 H

3.10 CONTROL ASSY(2/4)



Difference of the Andrew circuit

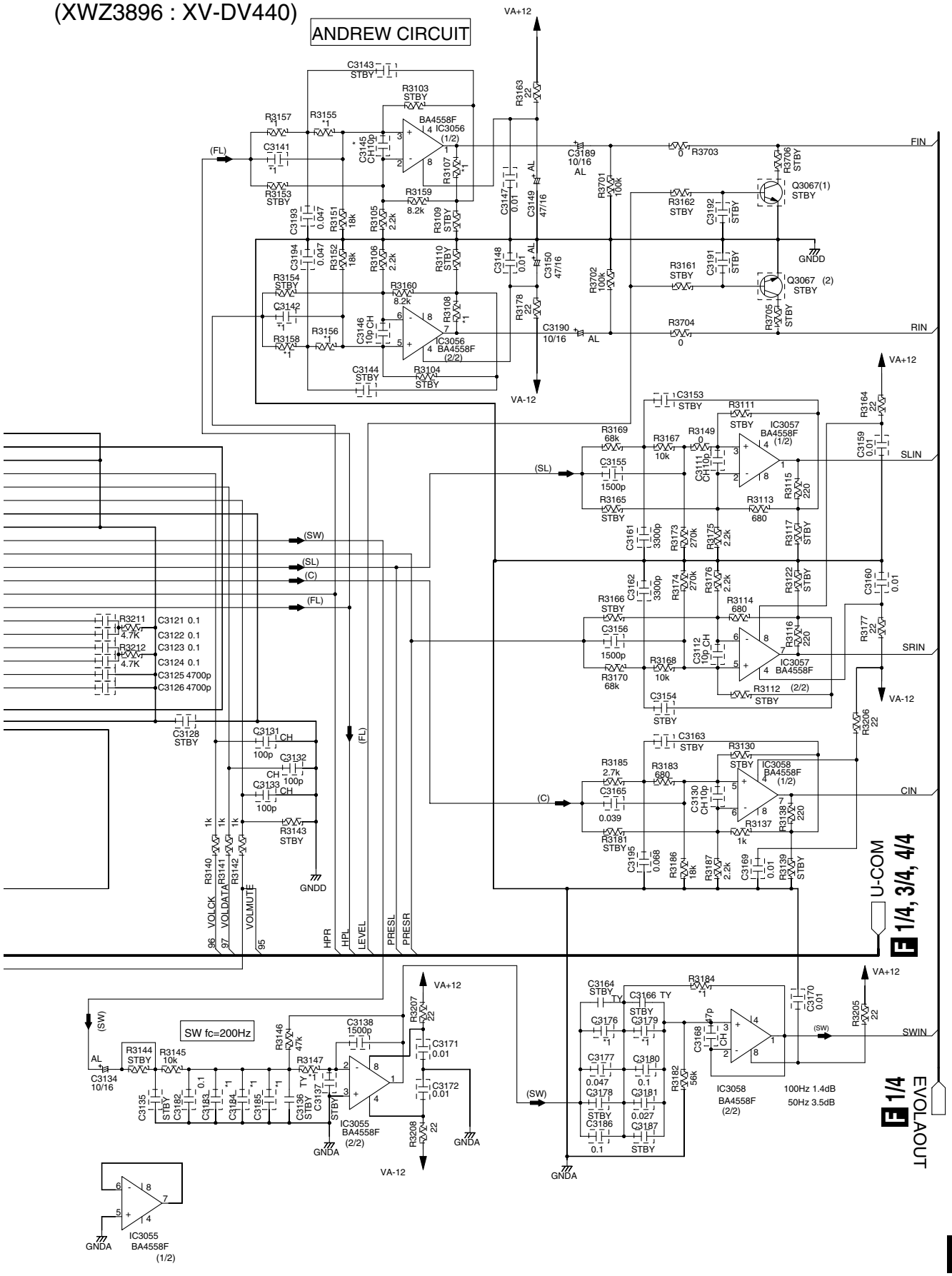
All resistors are : RS1/16***J-T
All capacitors are : CKSRYB***K**-T

*1

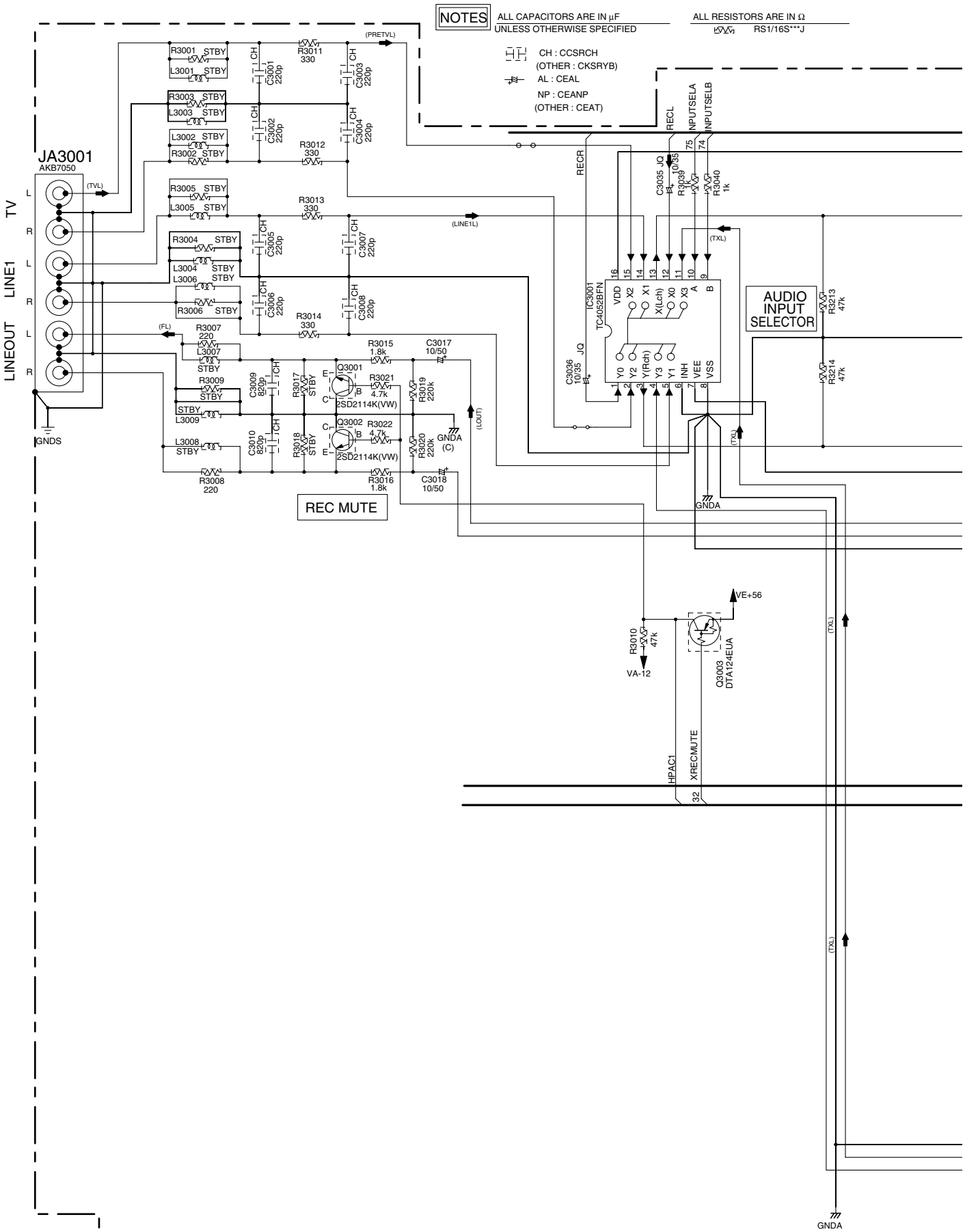
Wiring No.	XV-DV740 KUCXJ	XV-DV440 KCXJ	Wiring No.	XV-DV740 KUCXJ	XV-DV440 KCXJ
R3107	4.3k	5.6k	C3141	0.022/25	0.018/25
R3108	4.3k	5.6k	C3142	0.022/25	0.018/25
R3147	100k	100k	C3176	0.012/50	0.012/50
R3155	470	1.2k	C3179	0.056/16	0.056/16
R3156	470	1.2k	C3183	0.018/16	0.018/25
R3157	5.6k	3.6k	C3184	STBY	STBY
R3158	5.6k	3.6k	C3185	STBY	STBY
R3184	6.8k	6.8k			

F 2/4 CONTROL ASSY

(XWZ3882 : XV-DV740)
(XWZ3896 : XV-DV440)

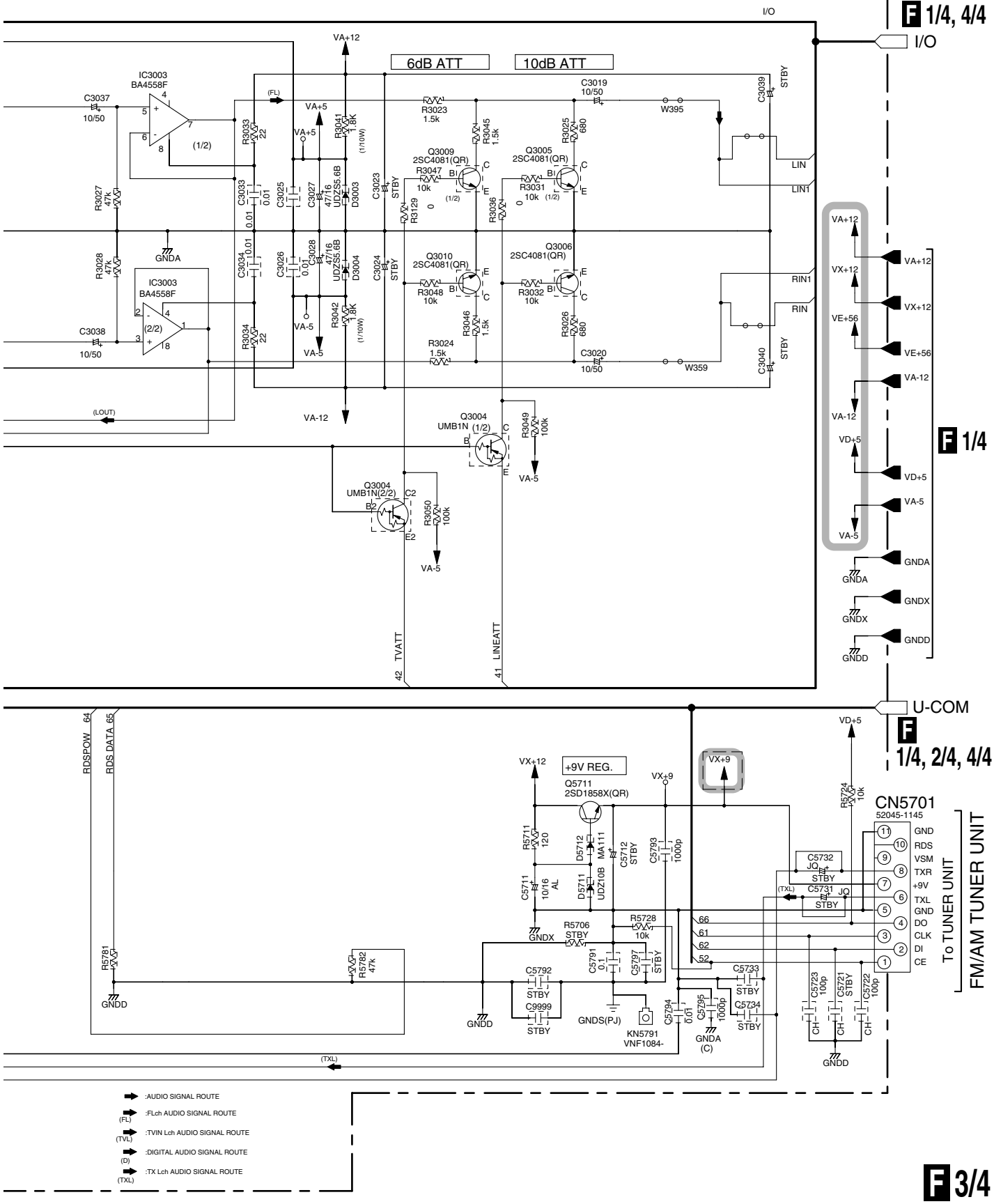


3.11 CONTROL ASSY(3/4)

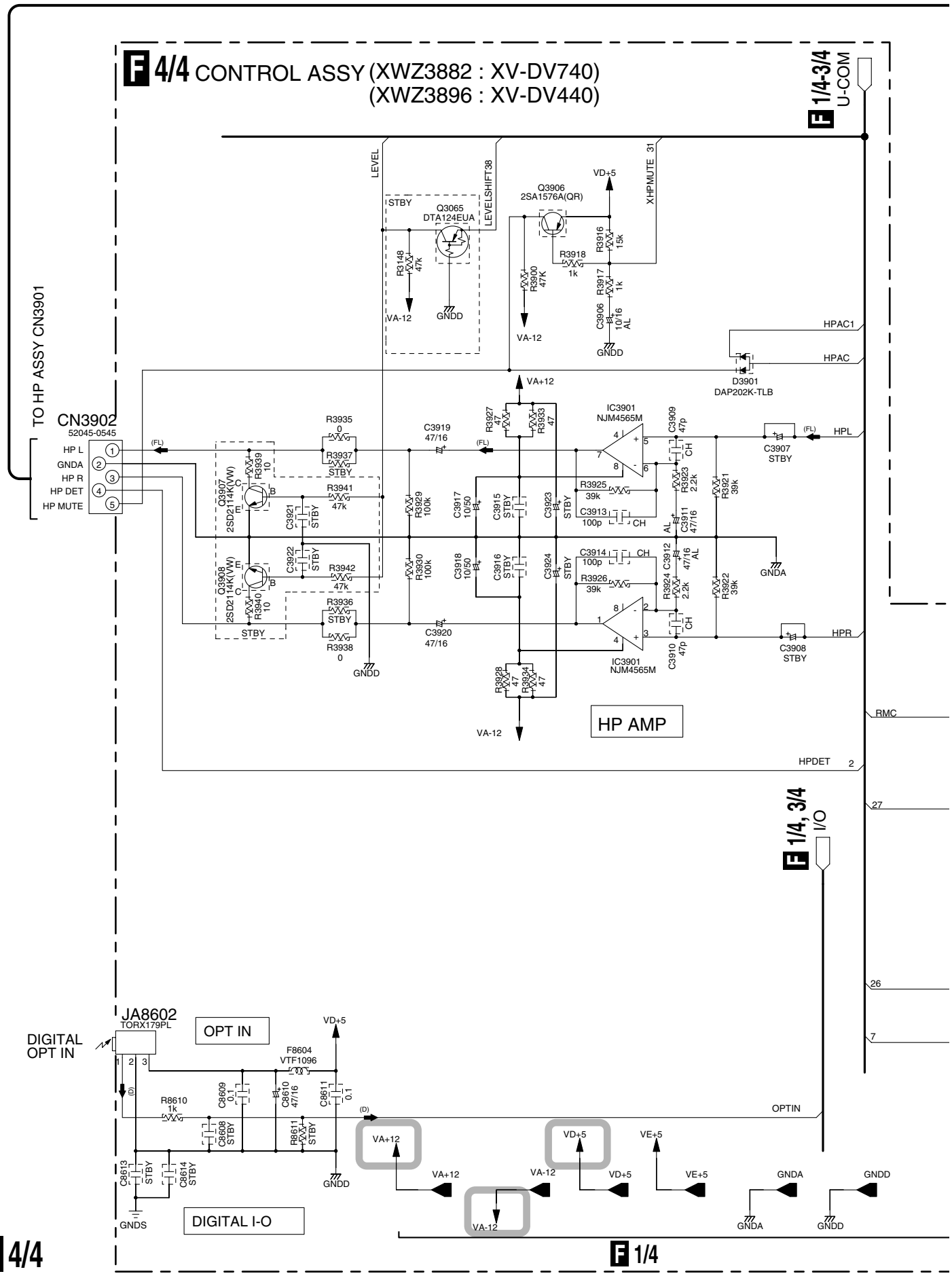


F 3/4

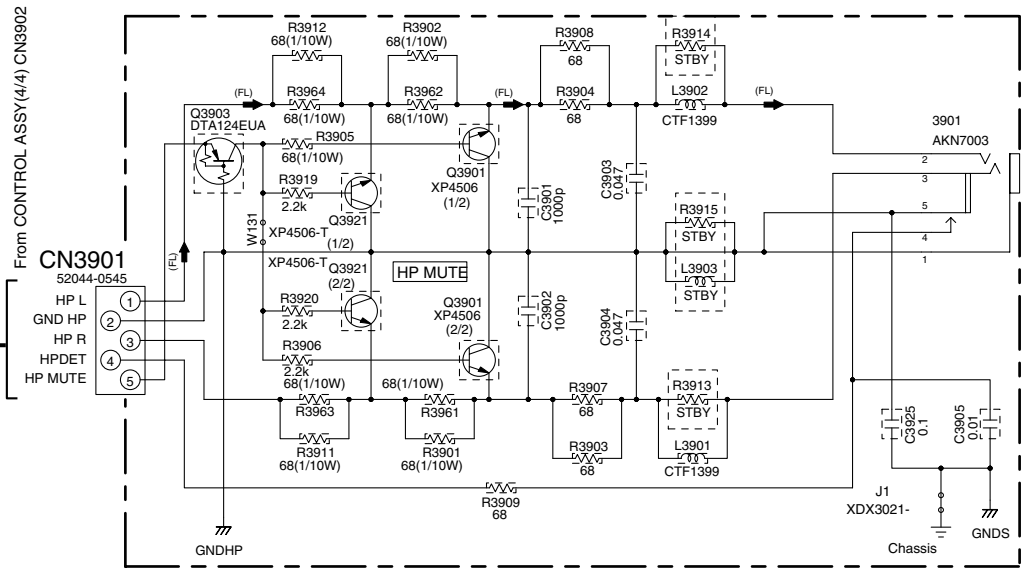
F 3/4 CONTROL ASSY (XWZ3882 : XV-DV740)
(XWZ3896 : XV-DV440)

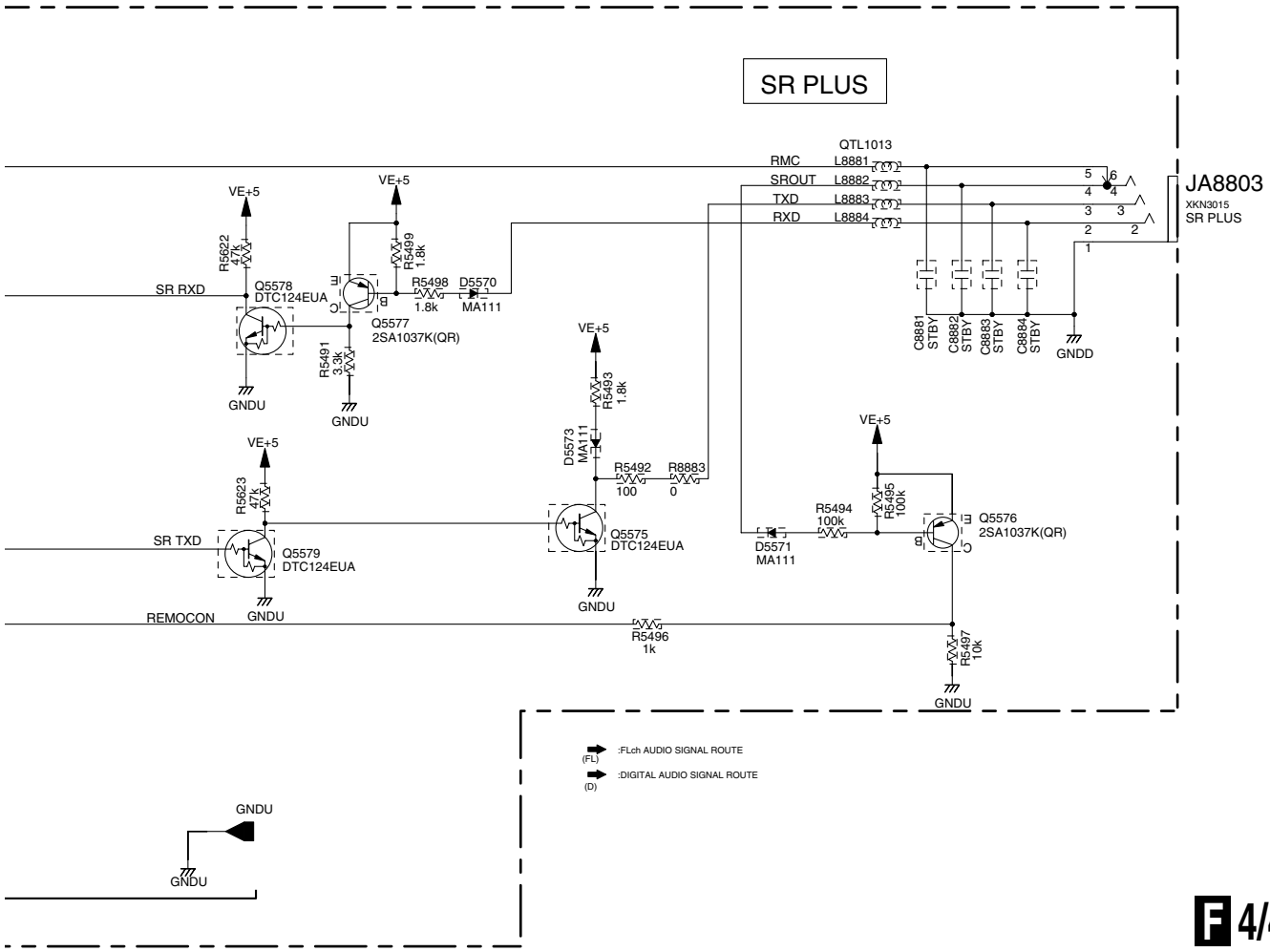


3.12 CONTROL ASSY(4/4) and HP ASSYS

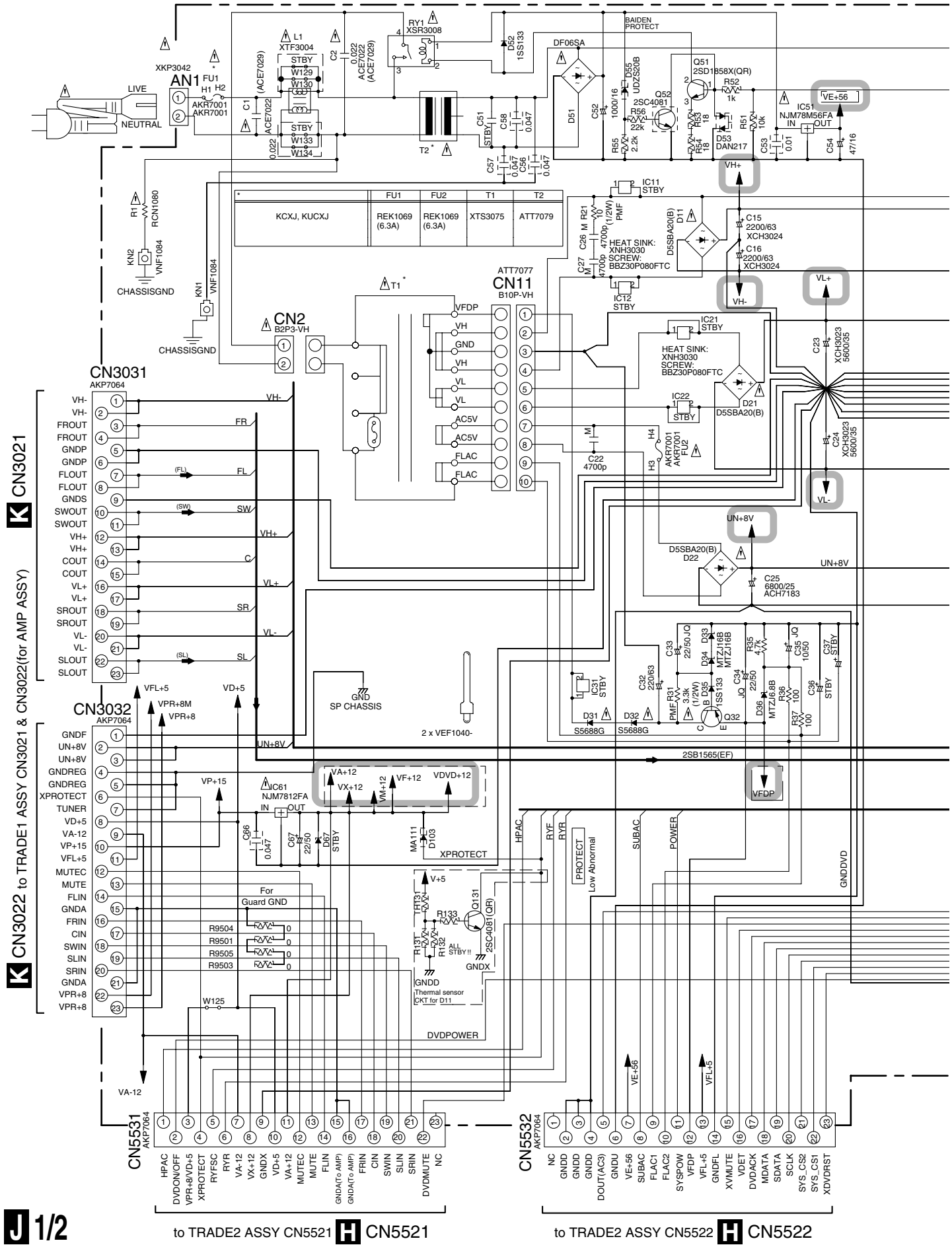


I HP ASSY (XWZ3869)

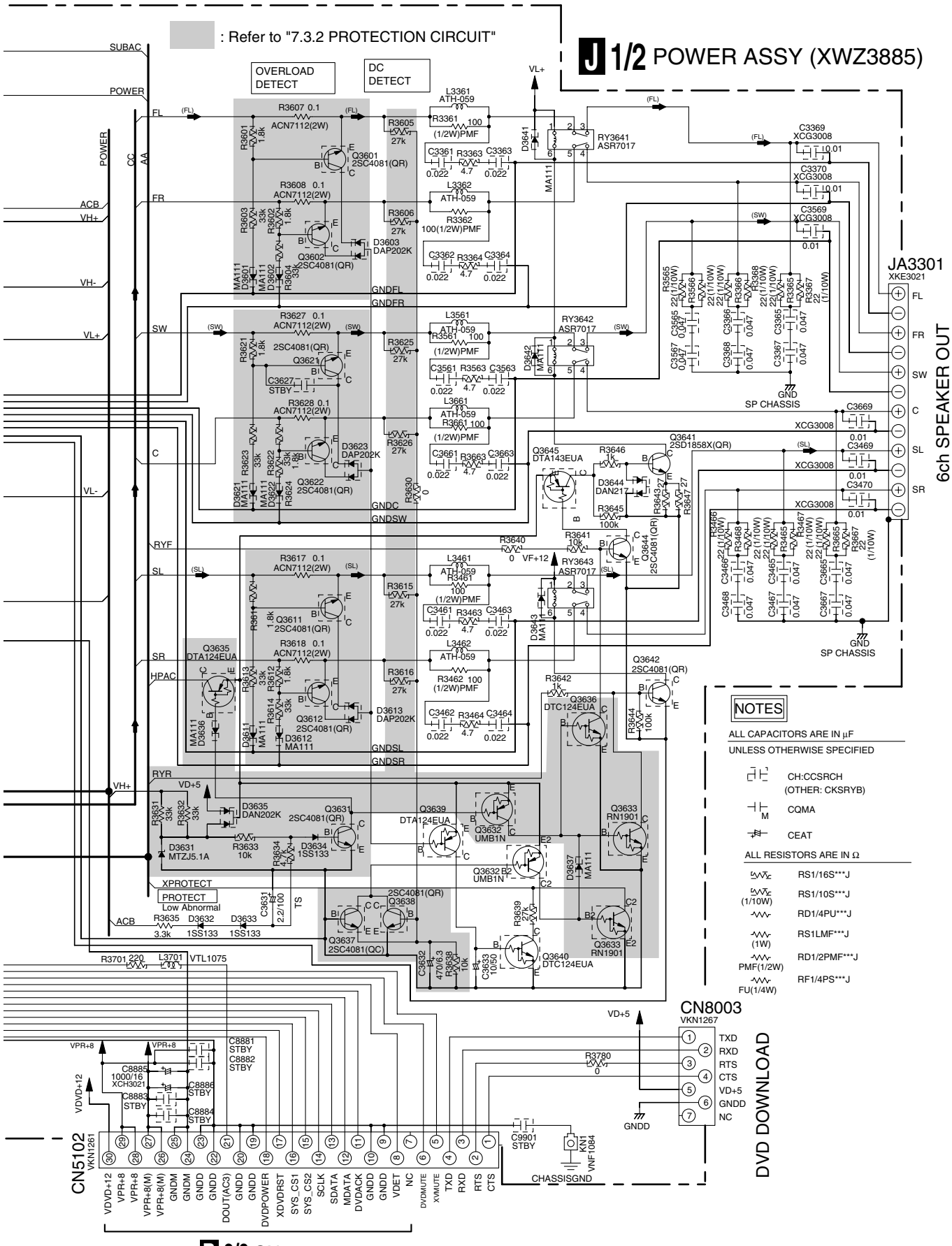




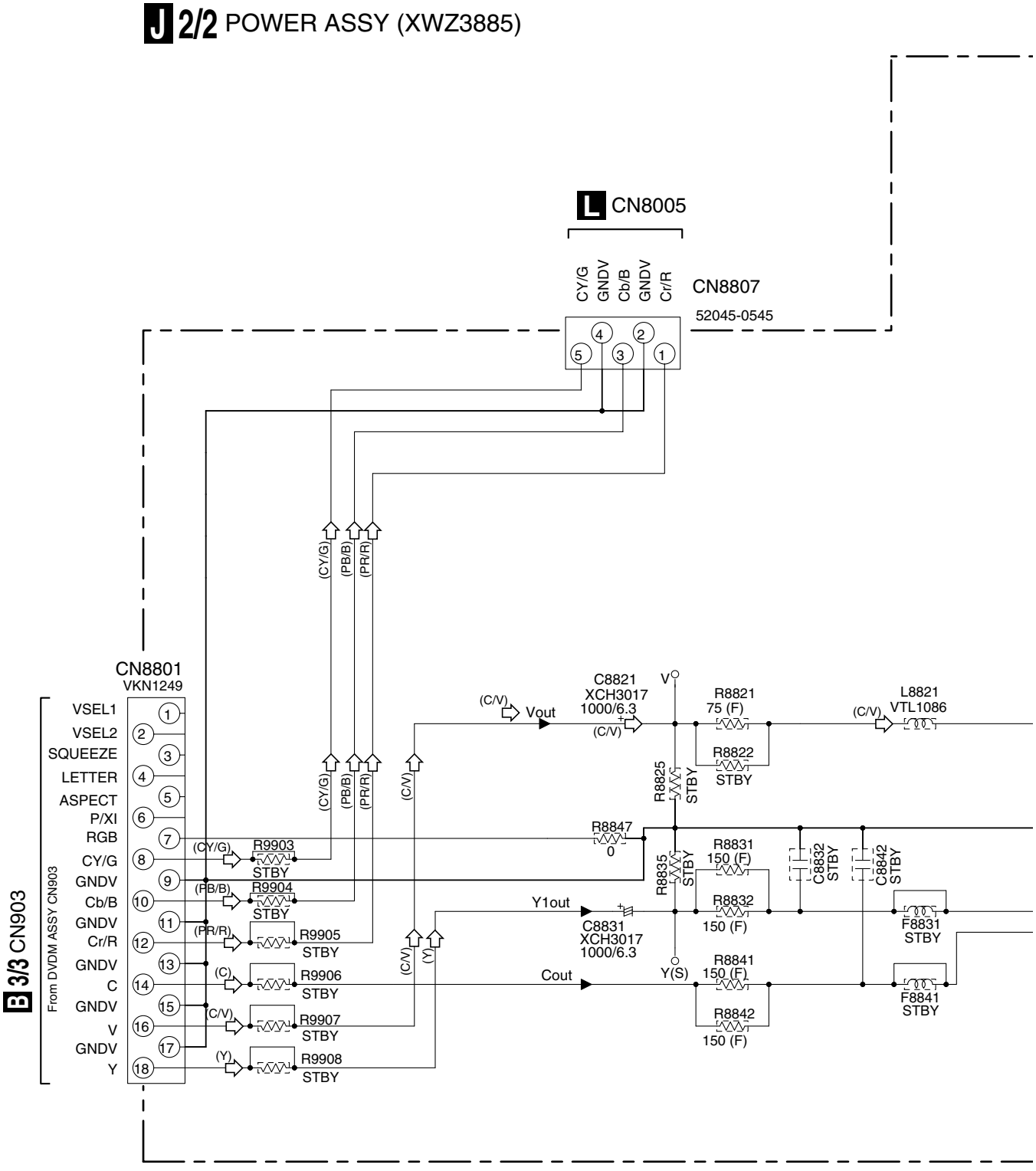
3.13 POWER ASSY(1/2)



*	FU1	FU2	T1	T2
KCXJ, KUCXJ	REK1069 (6.3A)	REK1069 (6.3A)	XTS3075	ATT7079


: Refer to "7.3.2 PROTECTION CIRCUIT"
J 1/2 POWER ASSY (XWZ3885)
OVERLOAD DETECT
DC DETECT
SUBAC
POWER
FL
FR
SW
C
RYF
SL
SR
HPAC
RYR
ACB
VH+
VH-
VL+
VL-
VD+5
VF+12
GNDFL
GNDFR
GNDC
GNDSW
GNDSL
GNDSR
XPROTECT
PROTECT
Low Abnormal
TS
VTL1075
JA3301
XKE3021
6ch SPEAKER OUT
GND
SP CHASSIS
CN8003
VKN1267
DVD DOWNLOAD
TXD
RXD
RTS
CTS
VD+5
GNDD
NC
CN5102
VKN1261
VDVD+12
VPR+8
VPR+8(M)
GNDM
GNDD
DOUT(AC3)
DVDPOWER
XDVDRST
SYS_CS1
SYS_CS2
SCLK
SDATA
MDATA
DVDACK
VDET
DVDMUTE
XVMUTE
CHASSISGND
B 3/3 CN901
from DVDM ASSY
:AUDIO SIGNAL ROUTE
:VIDEO SIGNAL ROUTE
NOTES
ALL CAPACITORS ARE IN μF
UNLESS OTHERWISE SPECIFIED
CH:CCSRCH
(OTHER: CKSRYB)
CQMA
CEAT
ALL RESISTORS ARE IN Ω
RS1/16S***J
RS1/10S***J
RD1/4PU***J
RS1LMF***J
RD1/2PMF***J
RF1/4PS***J
• NOTE FOR FUSE REPLACEMENT
CAUTION - FOR CONTINUED PROTECTION AGAINST RISK OF FIRE.
REPLACE WITH SAME TYPE AND RATINGS OF FUSE.
J 1/2

3.14 POWER ASSY(2/2) and TRADE1 ASSYS



(C/V): VIDEO SIGNAL ROUTE (C/V)
(Y): S VIDEO SIGNAL ROUTE (Y)
(C): S VIDEO SIGNAL ROUTE (Y)
(PR/R): VIDEO SIGNAL ROUTE (PR/R)
(CY/G): VIDEO SIGNAL ROUTE (CY/G)
(PB/B): VIDEO SIGNAL ROUTE (PB/B)

NOTES

ALL CAPACITORS ARE IN μF
UNLESS OTHERWISE SPECIFIED
CH : CCSRCH
(OTHER : CKSRYB)

ALL RESISTORS ARE IN Ω
RS1/16S***J

ALL INDUCTORS ARE IN μH
LAU***J

CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 491007 MFD, BY LITTELFUSE INK. FOR IC25 (AEK7021).

K TRADE 1 ASSY (XWZ3877)

V+12M → J 1/2 V+12M
VD+5 → J 1/2 VD+5

VIDEO OUT

JA8803 VKB1122
(C/V) (C/V) V
R8823 STBY
C8823 STBY
CN8802 AKP7179
(Y) Y
(C) C
Chassis

VIDEO OUT
S-VIDEO OUT

J 1/2 CN3031 — TO POWER ASSY CN3031

CN3021 AKP7075

1	VH-
2	VH-
3	FROUT
4	FROUT
5	GNDP
6	GNDP
7	FLOUT
8	FLOUT
9	GNDS
10	SWOUT
11	SWOUT
12	VH+
13	VH+
14	COUT
15	COUT
16	VL+
17	VL+
18	SROUT
19	SROUT
20	VL-
21	VL-
22	SLOUT
23	SLOUT

IC25 SUMI TUBE ADN7004 7A AEK7021
W309

D CN3001 — TO AMP ASSY CN3001

CN3011 AKP7075

1	VH-
2	VH-
3	FROUT
4	FROUT
5	GNDP
6	GNDP
7	FLOUT
8	FLOUT
9	GNDS
10	SWOUT
11	SWOUT
12	VH+
13	VH+
14	COUT
15	COUT
16	VL+
17	VL+
18	SROUT
19	SROUT
20	VL-
21	VL-
22	SLOUT
23	SLOUT

J 1/2 CN3032 — TO POWER ASSY CN3032

CN3022 AKP7075

1	GNDF
2	UN+8V
3	UN+8V
4	GNDREG
5	GNDREG
6	XPROTECT
7	TUNER
8	VD+5
9	VA-12
10	VP+15
11	VFL+5
12	MUTEC
13	MUTE
14	FLIN
15	GNDA
16	FRIN
17	CIN
18	SWIN
19	SLIN
20	SRIN
21	GNDA
22	VPR+8
23	VPR+8

R98 27k

D CN3002 — TO AMP ASSY CN3002

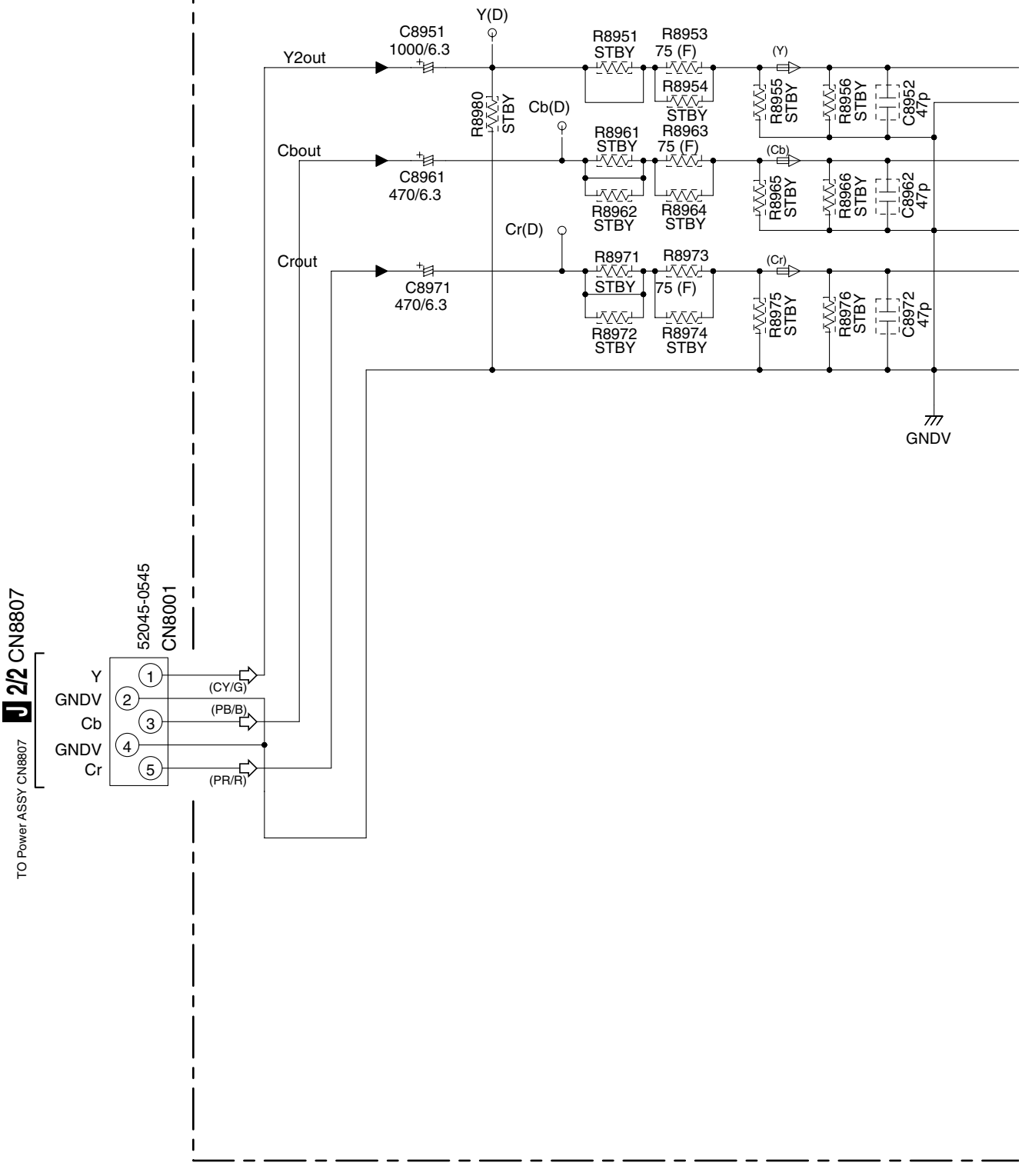
CN3012 AKP7075

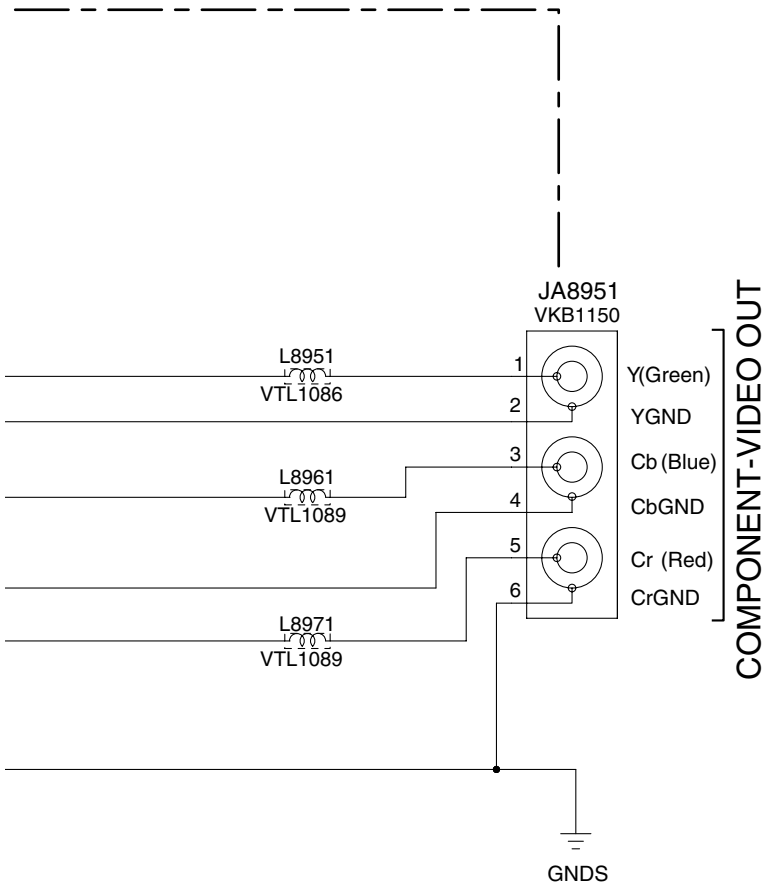
1	GNDF
2	UN+8V
3	UN+8V
4	GNDREG
5	GNDREG
9	XPROTECT
7	TUNER
8	VD+5
9	VA-12
10	VP+15
11	VFL+5
12	SENSE+8
13	MUTEC
14	MUTE
15	FLIN
16	GNDA
17	FRIN
18	CIN
19	SWIN
20	SLIN
21	SRIN
22	VPR+8
23	VPR+8

J 2/2 K

3.15 VIDEO ASSY

L VIDEO ASSY (XWZ3875)





NOTES

ALL CAPACITORS ARE IN μF
UNLESS OTHERWISE SPECIFIED

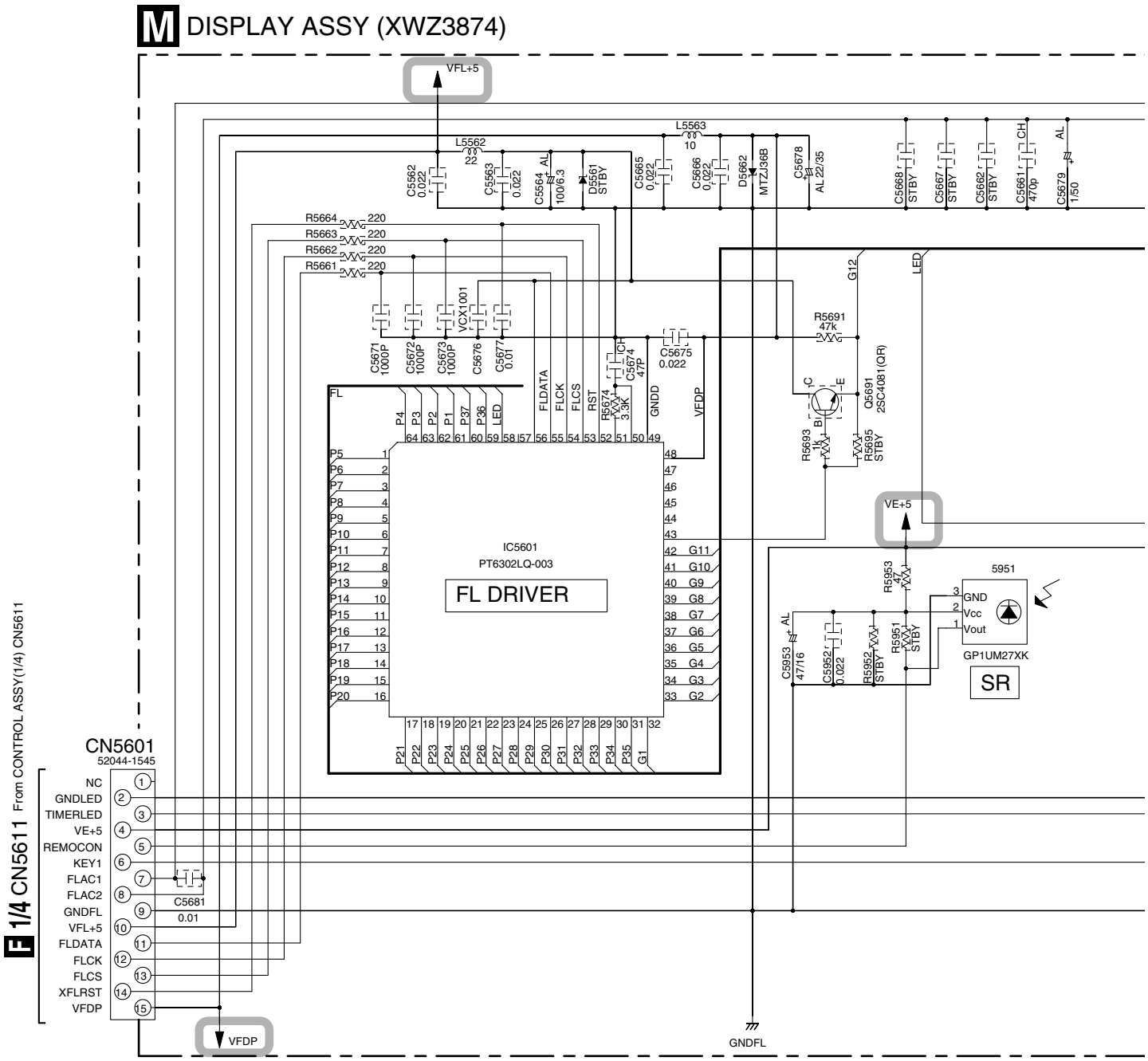
CH : CCSRCH
(OTHER : CKSRYB)
AL : CEAL
NP : CEANP
(OTHER : CEAT)

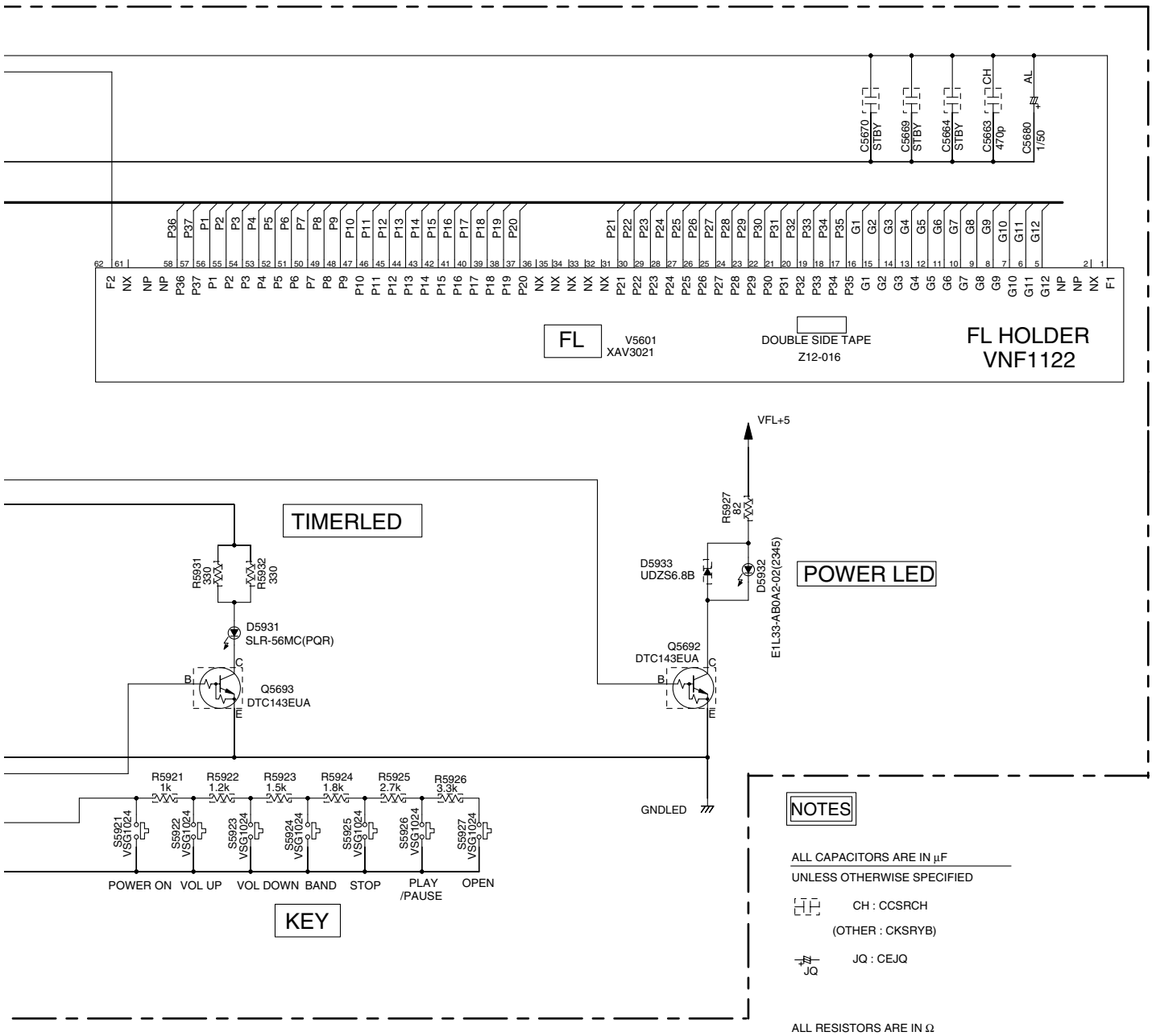
ALL RESISTORS ARE IN Ω

RS1/16S***J

(PR/R) : VIDEO SIGNAL ROUTE (PR/R)
(CY/G) : VIDEO SIGNAL ROUTE (CY/G)
(PB/B) : VIDEO SIGNAL ROUTE (PB/B)

3.16 DISPALY ASSY





NOTES

ALL CAPACITORS ARE IN μF
UNLESS OTHERWISE SPECIFIED

CH : CCSRCH
(OTHER : CKSRYB)

JQ : CEJQ

ALL RESISTORS ARE IN Ω

RS1/16S***J

ALL INDUCTORS ARE IN μH

LAU***J

NO MARK DIODE

1SS133

Switches

DISPLAY ASSY

S5921 : ⏻ STANDBY/ON
S5922 : UP +] VOLUME
S5923 : – DOWN]
S5924 : FM/AM
S5925 : ■ (STOP)
S5926 : ▶/❚❚ DVD/CD (PLAY/PAUSE)
S5927 : ⏏ OPEN/CLOSE

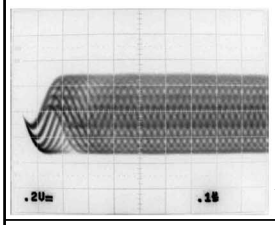
3.17 WAVEFORMS

Note : The encircled numbers denote measuring point in the schematic diagram.

B DVDM ASSY

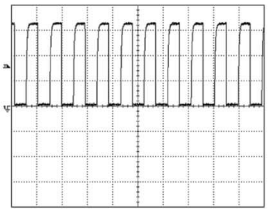
Measurement condition ; No. 1, 2 and 12 to 17 : MJK1, Title 1-chp 1
No. 8 : CD, ABEX-784 Track 1
No. 13, 14 and 17 : DVD-REF-A1, T2-Chap.1
No. 3 to 5 : DVD-REF-A1, T2-Chap.19

(1) IC301 - pin 4 [RFOUT]
V: 200mV/div. H: 0.1µsec/div.

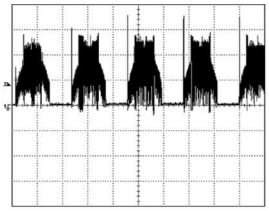


← GND

(2) IC301 - pin 36 [FG]
V: 1V/div. H: 5msec/div.

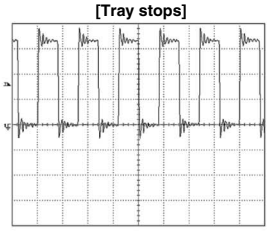


(3) IC101 - pin 14 [A1], 13 [A2], 12 [A3]
V: 2V/div. H: 2msec/div.

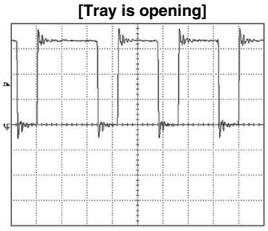


(4) IC301 - pin 55 [LOAD_DRV]
V: 1V/div. H: 500nsec/div.

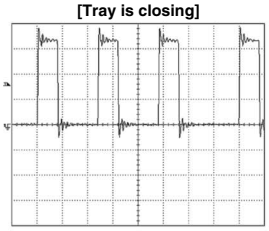
[Tray stops]



[Tray is opening]

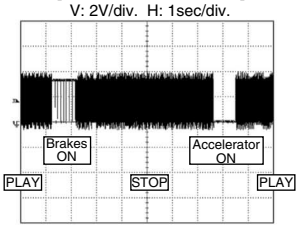


[Tray is closing]

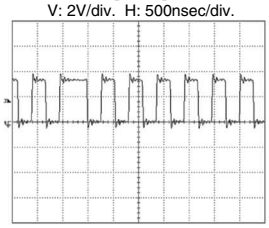


(5) IC301 - pin 44 [SPDL_PDM]

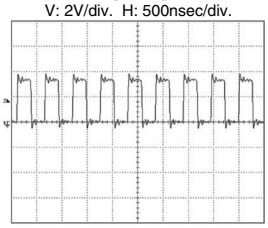
[PLAY → STOP → PLAY]
V: 2V/div. H: 1sec/div.



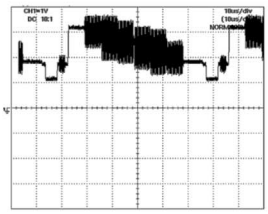
[PLAY]
V: 2V/div. H: 500nsec/div.



[STOP]
V: 2V/div. H: 500nsec/div.

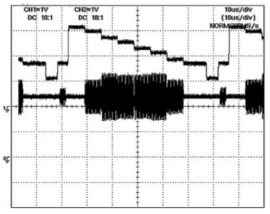


(6) IC501 - pin 23 [Composite Video out]
V: 1V/div. H: 10µsec/div.



(7) IC501 - pin 21 [S Video out-Y]
V: 1V/div. H: 10µsec/div.

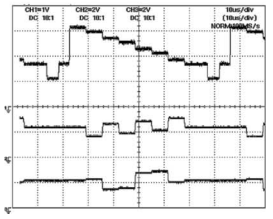
(8) IC501 - pin 26 [S Video out-C]
V: 1V/div. H: 10µsec/div.



(9) IC501 - pin 20 [Component Video out-Y]
V: 1V/div. H: 10µsec/div.

(10) IC501 - pin 18 [Component Video out-Pb]
V: 2V/div. H: 10µsec/div.

(11) IC501 - pin 16 [Component Video out-Pr]
V: 2V/div. H: 10µsec/div.



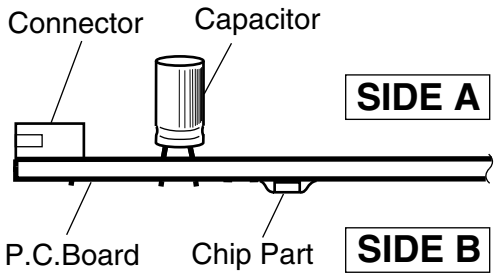
4. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

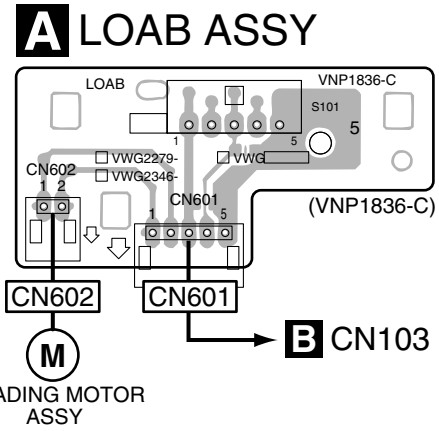
Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3-terminal regulator

3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.

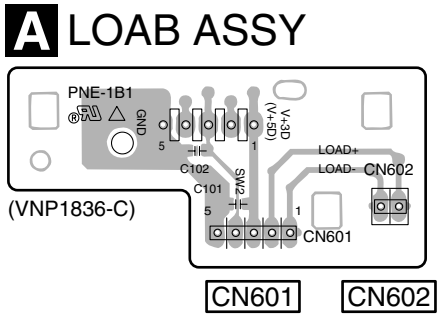


4.1 LOAB ASSY

SIDE A



SIDE B



5. PCB PARTS LIST

NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*

● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*

● *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω → 56 x 10[1] → 561 ..... RD1/4PU 5 6 1 J

47k Ω → 47 x 10[3] → 473 ..... RD1/4PU 4 7 3 J

0.5 Ω → R50 ..... RN2H R 5 0 K

1 Ω → 1R0 ..... RS1P 1 R 0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω → 562 x 10[1] → 5621 ..... RN1/4PC 5 6 2 1 F

LIST OF ASSEMBLIES

Mark	No.	Description	Part No.
NSP	1	..DVD ASSY	AXA7131
	2	..DVDM ASSY	AWM7878
NSP	2	..LOADING MECHA. ASSY	VWT1213
	3	..LOAB ASSY	VWG2346
	1	..DSP ASSY	AWX8526
NSP	1	..AMP MODULE 6CH	AXQ7254
	2	..6CH AMP ASSY	AZW7283
	1	..FM/AM TUNER UNUT	AXX7172
NSP	1	..MAIN ASSY (XV-DV740)	XWM3253
NSP	1	..MAIN ASSY (XV-DV440)	XWM3265
	2	..CONTROL ASSY (XV-DV740)	XWZ3882
	2	..CONTROL ASSY (XV-DV440)	XWZ3896
	2	..TRADE 3 ASSY	XWZ3868
	2	..HP ASSY	XWZ3869
	1	..TRADE 2 ASSY	XWX3071
NSP	1	..COMPLEX ASSY	XWM3256
	2	..POWER ASSY	XWZ3885
	2	..DISPLAY ASSY	XWZ3874
	2	..VIDEO ASSY	XWZ3875
	2	..TRADE 1 ASSY	XWZ3877

CONTRAST OF PCB ASSEMBLIES

F CONTROL ASSY

XWZ3882 and XWZ3896 are constructed the same except for the following:

Mark	Symbol and Description	XWZ3882	XWZ3896
	C3141, C3142	CKSRYB223K50	CKSRYB183K25
	R3107, R3108	RS1/16S432J	RS1/16S562J
	R3155, R3156	RS1/16S471J	RS1/16S122J
	R3157, R3158	RS1/16S562J	RS1/16S362J

PARTS LIST FOR XV-DV740

A LOAB ASSY

SWITCHES AND RELAYS

Mark	No.	Description	Part No.
	S101		VSK1011

OTHERS

Mark	No.	Description	Part No.
	CN602	KR CONNECTOR	S2B-PH-K
	CN601	KR CONNECTOR	S5B-PH-K

B DVDM ASSY

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC602		HY57V641620HGT-H
	IC101		M63018FP
⚠	IC431		MM1565AF
	IC501		MM1623BF
⚠	IC421		PQ018EH01ZP
⚠	IC411		PQ018EZ01ZP
⚠	IC441		PQ20WZ11
⚠	IC401		R1224N102H
	IC601		STM5589CVS
	IC301		STM6316ATPAZ
	IC911		TC74VHC08FT
	IC901		TC74VHCT125AFT
	IC604		TC7WU04FU
	IC603		VYW2193
	Q390		2SA1576A
⚠	Q451		2SA1576A
	Q923, Q924, Q926		2SA1576A
	Q202, Q212, Q452		2SC4081
	Q921		DTA124EUA
	Q951		DTC114TUA

Mark	No.	Description	Part No.
	Q724, Q977		DTC114YUA
	Q922, Q925		DTC124EUA
	Q201, Q211		HN1A01F
	Q911		RN1903
	Q603		RN4982
⚠	Q401		RSQ035P03
	D431, D432		1SR154-400
	D402, D403, D922–D927		1SS355
	D603		RB501V-40
	D401		RSX201L-30
	D921		UDZS4.7B

COILS AND FILTERS

L401	POWER INDUCTOR	ATH7011
L402	INDUCTOR	CTH1254
L390		LCYA2R7J2520

CAPACITORS

C408		CCSRCH121J50
C390		CCSRCH180J50
C142		CCSRCH221J50
C200		CCSRCH331J50
C690		CCSRCH470J50
C392		CCSRCH560J50
C393, C640, C644		CCSRCH7R0D50
C452		CEVW100M16
C101, C401, C404, C410, C412		CEVW101M16
C422, C443, C561, C564, C600		CEVW101M16
C621, C660		CEVW101M16
C415, C425		CEVW101M4
C201, C211		CEVW470M16
C406		CKSQYB104K25
C431		CKSQYB105K16
C433		CKSQYB225K10
C127, C128, C381, C562, C563		CKSRYB102K50
C624		CKSRYB102K50
C112–C114, C124, C125, C130		CKSRYB103K50
C133, C134, C355		CKSRYB103K50
C102, C132, C139, C230		CKSRYB104K16
C232, C233, C300, C307, C309		CKSRYB104K16
C315, C318, C323, C326, C335		CKSRYB104K16
C342, C348, C357, C362, C373		CKSRYB104K16
C377, C388, C391, C413, C414		CKSRYB104K16
C423, C424, C441, C442, C451		CKSRYB104K16
C511, C531, C551, C565, C571		CKSRYB104K16
C604, C607, C614, C619		CKSRYB104K16
C622, C623, C626–C632		CKSRYB104K16
C636, C637, C641, C647–C649		CKSRYB104K16
C659, C664, C671, C681, C684		CKSRYB104K16
C694, C698, C902, C912, C921		CKSRYB104K16
C501, C521, C541, C603, C620		CKSRYB105K10
C625		CKSRYB105K10
C394		CKSRYB152K50
C126, C346		CKSRYB223K50
C202, C205, C212, C215		CKSRYB472K50
C402, C403, C405, C409 (10uF/16V)		DCH1165

RESISTORS

R201		RAB4C220J
R211		RAB4C390J
R100, R1011-R1013,R111, R210		RS1/10S0R0J
R387–R389, R412–R415, R417		RS1/10S0R0J
R421, R422, R561, R600, R623		RS1/10S0R0J
R403		RS1/10S100J
R105, R106, R115–R120		RS1/10S4R7J
R104, R107		RS1/10S6R8J
R125, R144, R330, R331, R628		RS1/16S1002F
R635		RS1/16S1002F
R301		RS1/16S1202F
R502, R512, R522, R532, R542		RS1/16S1500F
R552		RS1/16S1500F
R408		RS1/16S1502F
R410		RS1/16S1802F
R443		RS1/16S2001F
R409		RS1/16S2702F
R441		RS1/16S4701F
R101, R102, R123, R142, R143		RS1/16S5600F
R442		RS1/16S6801F
R411		RS1/8S0R0J
Other Resistors		RS1/16S###J

OTHERS

CN104	4P CONNECTOR	AKN7035
CN105	12P FFC CONNECTOR	RKN1053
CN103	PH CONNECTOR	S5B-PH-SM3
	FLEXIBLE CABLE 7P	VDA1681
CN903	18P FFC CONNECTOR	VKN1310
CN901	30P FFC CONNECTOR	VKN1322
CN101	0.5-24P CONNECTOR	VKN1482
X601	CRYSTAL RESONATOR (27MHz)	VSS1172
X301	CHIP CERAMIC RESONATOR (20MHz)	VSS1186

C DSP ASSY

SEMICONDUCTORS

IC8201		AK4114VQ
IC8401		AK4628VQE
IC8501		DSPD56367PV150
IC8901		NJM2391DL1-33
IC8902		NJU7223DL1-18
IC8701		TC74LVX244FT
IC8702		TC74VHCT244AFT
IC8502		TC7WU04FU
Q8504		UMD2N
Q8503		UN5112
D8501		1SS355
D8401		DAN202K
D8402,D8502,D8503		DAP202K

COILS AND FILTERS

L8002,L8004,L8501,L8502	CHIP FERRITE BEAD	ATL7002
L8201,L8203,L8204,L8401,L8402		QTL1013
L8504,L8701,L8702	CHIP SOLID INDUCTOR	QTL1013

CAPACITORS

C8209,C8210		CCSRCH100D50
C8421		CCSRCH101J50
C8007,C8008,C8201,C8212,C8214		CCSRCH471J50
C8404,C8409-C8414,C8416,C8417		CCSRCH471J50
C8419,C8505,C8507,C8509		CCSRCH471J50

Mark	No.	Description	Part No.
	C8511,C8512,C8515,C8518,C8520		CCSRCH471J50
	C8522,C8524,C8526,C8528,C8530		CCSRCH471J50
	C8532,C8534,C8536,C8539,C8541		CCSRCH471J50
	C8543,C8545,C8551,C8703,C8706		CCSRCH471J50
	C8548,C8549		CCSRCH8R0D50
	C8701,C8704		CEVW100M16
	C8406,C8415,C8546,C8547,C8902		CEVW101M16
	C8904		CEVW101M16
	C8217,C8225,C8408		CEVW470M6R3
	C8204,C8555		CKSRYB102K50
	C8009,C8405,C8418,C8517,C8554		CKSRYB103K50
	C8010,C8202,C8207,C8213,C8215		CKSRYB104K16
	C8407,C8420,C8422,C8504,C8513		CKSRYB104K16
	C8521,C8523,C8525,C8527,C8529		CKSRYB104K16
	C8531,C8533,C8535,C8537,C8538		CKSRYB104K16
	C8540,C8542,C8544,C8550,C8702		CKSRYB104K16
	C8705,C8901,C8903		CKSRYB104K16
	C8516		CKSRYB105K6R3
	C8514		CKSRYB333K16
	C8203		CKSRYB473K50

RESISTORS

	R8506	RAB4C101J
	R8201	RS1/16S1802F
	Other Resistors	RS1/16S###J

OTHERS

	CN8003 13P SOCKET	AKP7070
	CN8007,CN8011 19P SOCKET	AKP7073
	KN8102 WRAPPING TERMINAL	VNF1084
	X8501 CRYSTAL RESONATOR (20MHz)	VSS1171
	X8201 CRYSTAL RESONATOR (24.576MHz)	XSS3003 XSS3003

D 6CH AMP ASSY

SEMICONDUCTORS

⚠	IC81	NJM7805FA
⚠	IC71	NJM7912FA
⚠	IC3301,IC3401	STK402-270
	Q3382,Q43	2SA1576A
	Q62	2SB1237X
	Q111, Q3381,Q63, Q92	2SC4081
⚠	Q61	2SD2012
	Q3301,Q3302,Q3401,Q3402	2SD2114K
	Q3501,Q3502,Q3504	2SD2114K
	Q3654	2SD2144S
	Q107, Q3653	DTA124EUA
	Q3652	DTA124TK
	Q106	DTC124EUA
⚠	Q3383,Q91	IRFI9Z34G
⚠	Q3384	IRFIZ34G
	Q3651	RN1901
	Q101, Q103	UMB1N
	Q102, Q104	UMH1N
⚠	D3321-D3326	1SR139-400
	D3327,D3328	1SR139-400
⚠	D3421-D3426	1SR139-400
	D3427,D3428	1SR139-400
	D3387,D3388,D3651-D3655	1SS133
	D101, D102, D104, D3657,D42	1SS355
⚠	D3391,D3392	30PDA20-FC6
⚠	D3381,D3382,D3481,D3482	DAN217
⚠	D3581,D3582	DAN217
	D3389,D3390	MTZJ10C
⚠	D98	MTZJ11B
⚠	D72	MTZJ15C
	D3393,D3394	MTZJ18B
⚠	D63	MTZJ18C
	D3385,D3386	MTZJ36A
⚠	D82	MTZJ7.5C
	D91	UDZS18B
	D105, D106, D3658	UDZS7.5B
	TH111	NCP18WF104J03RB

CAPACITORS

	C3305,C3306,C3405,C3406	CCSRCH221J50
	C3505,C3506,C62, C97	CCSRCH221J50
	C3309,C3310,C3409,C3410	CCSRCJ3R0C50
	C3509,C3510	CCSRCJ3R0C50
	C3307,C3308,C3407,C3408,C3508	CEAL100M16
	C3507	CEAL470M6R3
	C72	CEAT100M50
	C3651	CEAT101M25
	C101, C102	CEAT1R0M50
	C3323,C3324,C3423,C3424	CEAT221M50
	C3167,C3168,C3178,C3179	CEAT2R2M50
	C3301,C3302,C3317,C3318	CEAT2R2M50
	C3401,C3402,C3501,C3502	CEAT2R2M50
	C3652,C63, C82, C98	CEAT470M25
	C3653	CEAT470M35
	C3303,C3304,C3403,C3404	CKSRYB102K50
	C3503,C3504	CKSRYB102K50
	C92	CKSRYB104K16
	C71, C81	CKSRYB473K50

RESISTORS

	R3317-R3320,R3417-R3420	ACN7122
	R3517-R3520 (0.22/2W)	ACN7122
⚠	R3327,R3328,R3427,R3428	RD1/4MUF470J
	R3387,R3388	RD1/4PU101J
	R3657	RD1/4PU330J
	R96, R97	RS1/16S1002F
⚠	R3323,R3324,R3351,R3423,R3424	RS1/16S1R0J
⚠	R3451	RS1/16S1R0J
	R67, R68	RS1/16S2201F
	R94, R95	RS1/16S2701F
⚠	R62	RS1/16S330J
	R65	RS1/16S4700F
	R47, R48	RS1/16S4701F
	Other Resistors	RS1/16S###J

OTHERS

	CN3001,CN3002 23P PLUG	AKP7064
	CN3651 2P PLUG	KM200SA2

F CONTROL ASSY

SEMICONDUCTORS

	IC3003,IC3051-IC3053,IC3055-IC3058	BA4558F-HT
	IC3062	BD3814FV
	IC3901	NJM4565M
	IC5501	PDC114B

Mark No.	Description	Part No.
IC3001		TC4052BFN
IC3059		TC4066BFN
Q5576,Q5577		2SA1037K
Q3906		2SA1576A
Q3005,Q3006,Q3009,Q3010,Q5501		2SC4081
Q5572		2SC4081
Q5711		2SD1858X
Q3001,Q3002		2SD2114K
Q3003,Q3061,Q3069,Q3071		DTA124EUA
Q3060,Q3070,Q5575,Q5578,Q5579		DTC124EUA
Q5571		DTC143EUA
Q5595		RN2901
Q3004		UMB1N
D3901		DAP202K
D5570,D5571,D5573,D5575		MA111
D5595,D5596,D5712		MA111
D5711		UDZS10B
D3003,D3004		UDZS6.2B
D3052,D3053		UDZS6.8B

COILS AND FILTERS

L5571	LFEA220J
L8881-L8884 CHIP SOLID INDUCTOR	QTL1013
F8604 CHIP SOLID INDUCTOR	VTF1096

CAPACITORS

C5575 (0.047F/5.5V)	ACH1246
C3111,C3112,C3130,C3145,C3146	CCSRCH100D50
C3131-C3133,C3913,C3914	CCSRCH101J50
C5510,C5511,C5577,C5722,C5723	CCSRCH101J50
C3001-C3008	CCSRCH221J50
C3053,C3054	CCSRCH331J50
C3041,C3168,C3909,C3910	CCSRCH470J50
C3059,C3060	CCSRCH680J50
C3009,C3010,C3055,C3056	CCSRCH821J50
C3077,C3078,C3089	CCSRCH821J50
C3134,C3189,C3190,C3906,C5711	CEAL100M16
C3149,C3150	CEAL470M16
C3017-C3020,C3037,C3038	CEAT100M50
C3079,C3080,C3085,C3086	CEAT100M50
C3093,C3094,C3173,C3174	CEAT100M50
C3917,C3918,C5576	CEAT100M50
C5572	CEAT101M10
C5578	CEAT1R0M50
C3113,C3114	CEAT221M10
C3027,C3028,C3911,C3912	CEAT470M16
C3919,C3920,C8610	CEAT470M16
C3051,C3052,C3061,C3062	CEJQ100M16
C3069,C3070	CEJQ100M16
C3035,C3036	CEJQ100M35
C5595,C5596	CEJQ220M25
C3065,C3066	CEJQ470M16
C5504,C5789,C5793,C5795	CKSRYB102K50
C3025,C3026,C3033,C3034	CKSRYB103K50
C3067,C3068,C3083,C3084	CKSRYB103K50
C3091,C3092,C3115,C3116	CKSRYB103K50
C3147,C3148,C3159,C3160	CKSRYB103K50
C3169-C3172,C5506,C5508,C5571	CKSRYB103K50
C5573,C5580,C5794,C5798,C5799	CKSRYB103K50
C3121-C3124,C3180,C3182,C3186	CKSRYB104K16
C5513-C5516,C5574,C5791,C8609	CKSRYB104K16
C8611	CKSRYB104K16
C3176	CKSRYB123K50
C3071,C3072,C3075,C3076,C3087	CKSRYB152K50
C3097,C3138,C3155,C3156	CKSRYB152K50
C3183	CKSRYB183K25
C3141,C3142	CKSRYB223K50
C3181	CKSRYB273K16
C3161,C3162	CKSRYB332K50
C3165	CKSRYB393K16
C3125,C3126	CKSRYB472K50
C3177,C3193,C3194	CKSRYB473K25
C3179	CKSRYB563K16
C3090	CKSRYB682K50
C3195	CKSRYB683K16

RESISTORS

R3118,R3119	RD1/2VM151J
R3041,R3042	RS1/10S182J
Other Resistors	RS1/16S###J

OTHERS

CN3902 5P FFC CONNECTOR	52045-0545
CN5701 11P FFC CONNECTOR	52045-1145
CN5611 15P FFC CONNECTOR	52045-1545
JA3001 6P PIN JACK	AKB7050
CN5613 11P PLUG	AKP7058
CN5612,CN5620 19P PLUG	AKP7062
CN5501,CN5502 23P PLUG	AKP7064
X5501 CERAMIC RESONATOR (10MHz)	ASS7034
JA8602 OPTICAL INPUT JACK	TORX179PL
KN5501,KN5791 TERMINAL	VNF1084
JA8803 MINI JACK(4P) /W SW	XKN3015

G TRADE 3 ASSY

OTHERS

CN5615 13P PLUG	AKP7059
CN5614,CN5618 19P PLUG	AKP7062
CN5617 11P SOCKET	AKP7069
CN5616,CN5619 19P SOCKET	AKP7073

H TRADE 2 ASSY

SEMICONDUCTORS

Q114	2SD2114K
Q115	DTA124EUA

RESISTORS

All Resistors	RS1/16S###J

OTHERS

CN5511,CN5512,CN5521,CN5522 23P SOCKET	AKP7075

I HP ASSY

SEMICONDUCTORS

Q3903	DTA124EUA
Q3901,Q3921	XP4506

Mark	No.	Description	Part No.
		COILS AND FILTERS	
	L3901,L3902	CHIP BEAD	CTF1399
		CAPACITORS	
	C3901,C3902		CKSRYB102K50
	C3905		CKSRYB103K50
	C3925		CKSRYB104K16
	C3903,C3904		CKSRYB473K25
		RESISTORS	
	R3901,R3902,R3911,R3912		RS1/10S680J
	R3961-R3964		RS1/10S680J
	Other Resistors		RS1/16S###J
		OTHERS	
	CN3901	5P FFC CONNECTOR	52044-0545
	3901	MINI JACK	AKN7003
		PCB BINDER	VEF1040

J POWER ASSY

Mark	No.	Description	Part No.
		SEMICONDUCTORS	
⚠	IC61		NJM7812FA
⚠	IC51		NJM78M56FA
⚠	Q32		2SB1565
	Q3601,Q3602,Q3611,Q3612		2SC4081
	Q3621,Q3622,Q3631,Q3637,Q3638		2SC4081
	Q3642,Q3644,Q52		2SC4081
	Q3641,Q51		2SD1858X
	Q3635,Q3639		DTA124EUA
	Q3645		DTA143EUA
	Q3636,Q3640		DTC124EUA
	Q3633		RN1901
	Q3632		UMB1N
	D35, D3632-D3634,D52		1SS133
⚠	D11, D21, D22		D5SBA20
	D3635		DAN202K
	D3644,D53		DAN217
	D3603,D3613,D3623		DAP202K
⚠	D51		DF06SA
	D103, D3601,D3602,D3611,D3612		MA111
	D3621,D3622,D3636,D3637		MA111
	D3641-D3643		MA111
	D33, D34		MTZJ16B
	D3631		MTZJ5.1A
	D36		MTZJ6.8B
⚠	D31, D32		S5688G
	D55		UDZS20B
		COILS AND FILTERS	
	L3361,L3362,L3461,L3462,L3561		ATH-059
	L3661	AF CHOKE COIL	ATH-059
	L3701	CHIP BEAD	VTL1075
	L8821	CHIP BEAD	VTL1086
⚠	L1	LINE FILTER	XTF3004
		TRANSFORMERS	
⚠	T2		ATT7079
		SWITCHES AND RELAYS	
	RY3641-RY3643		ASR7017
⚠	RY1		XSR3008
		CAPACITORS	
⚠	C1, C2	(0.022/AC275V)	ACE7022
	C25		ACH7183
	C3633		CEAT100M50
	C52		CEAT102M16
	C33, C34, C67		CEAT220M50
	C32		CEAT221M63
	C3631		CEAT2R2M2A
	C54		CEAT470M16
	C3632		CEAT471M6R3
	C35		CEJQ100M50
	C53		CKSRYB103K50
	C3361-C3364,C3461-C3464,C3561		CKSRYB223K50
	C3563,C3661,C3663		CKSRYB223K50
	C3365-C3368,C3465-C3468,C3565		CKSRYB473K50
	C3567,C3665,C3667,C56–C58		CKSRYB473K50
	C66		CKSRYB473K50
	C22, C26, C27		CQMA472J50
	C3369,C3370,C3469,C3470,C3569		XCG3008
	C3669	(0.01pF/100V)	XCG3008
	C8821,C8831	(1000uF/6.3V)	XCH3017
	C8885		XCH3021
	C23, C24	(5600uF/35V)	XCH3023
	C15, C16	(2200uF/63V)	XCH3024
		RESISTORS	
	R3607,R3608,R3617,R3618		ACN7112
	R3627,R3628	(0.1/ 2W)	ACN7112
	R1 (2.2M/ 1/2W)		RCN1080
	R21		RD1/2PMF100J
	R3361,R3362,R3461,R3462,R3561		RD1/2PMF101J
	R3661		RD1/2PMF101J
	R31		RD1/2PMF332J
	R36, R37		RD1/4PU101J
	R3635		RD1/4PU332J
	R3631,R3632		RD1/4PU333J
	R35		RD1/4PU472J
	R3365-R3368,R3465-R3468		RS1/10S220J
	R3565,R3566,R3665,R3667		RS1/10S220J
	R8831,R8832,R8841,R8842		RS1/16S1500F
	R8821		RS1/16S75R0F
	Other Resistors		RS1/16S###J
		OTHERS	
	CN8807	5P FFC CONNECTOR	52045-0545
	CN3031,CN3032,CN5531,CN5532	23P PLUG	AKP7064
	CN8802	4P MINI DIN SOCKET	AKP7179
	H1–H4	FUSE CLIP	AKR7001
	CN11	10P VH CONNECTOR	B10P-VH
⚠	CN2	2P VH CONNECTOR	B2P3-VH
		SCREW	BBZ30P080FTC
		PCB BINDER	VEF1040
	JA8803	1P PIN JACK	VKB1122
	CN8801	18P FFC CONNECTOR	VKN1249
	CN5102	30P FFC CONNECTOR	VKN1261
	CN8003	7P FFC CONNECTOR	VKN1267
	KN1, KN2	WRAPPING TERMINAL	VNF1084
	JA3301	6CH SPEAKER JACK	XKE3021
⚠	AN1	AC INLET 1P	XKP3042
	D. HEAT SINK		XNH3030

K TRADE 1 ASSY

Mark	No.	Description	Part No.
SEMICONDUCTORS			
⚠	IC25 (7A)		AEK7021
RESISTORS			
	All Resistors		RS1/16S###J
OTHERS			
	CN3011,CN3012,CN3021,CN3022	23P SOCKET	AKP7075

L VIDEO ASSY

COILS AND FILTERS		
	L8951 CHIP BEADS	VTL1086
	L8961,L8971 CHIP BEADS	VTL1089
CAPACITORS		
	C8952,C8962,C8972	CCSRCH470J50
	C8951	CEAT102M6R3
	C8961,C8971	CEAT471M6R3
RESISTORS		
	R8953,R8963,R8973	RS1/16S75R0F
OTHERS		
	CN8001 5P FFC CONNECTOR	52045-0545
	JA8951 3P PIN JACK	VKB1150

M DISPLAY ASSY

SEMICONDUCTORS		
	IC5601	PT6302LQ-003
	Q5691	2SC4081
	Q5692,Q5693	DTC143EUA
	D5932	E1L33-AB0A2-02
	D5662	MTZJ36B
	D5931	SLR-56MC
	D5933	UDZS6.8B
COILS AND FILTERS		
	L5563	LAU100J
	L5562	LAU220J
SWITCHES AND RELAYS		
	S5921-S5927	VSG1024
CAPACITORS		
	C5674	CCSRCH470J50
	C5661,C5663	CCSRCH471J50
	C5564	CEAL101M6R3
	C5679,C5680	CEAL1R0M50
	C5678	CEAL220M35
	C5953	CEAL470M16
	C5671-C5673	CKSRYB102K50
	C5677,C5681	CKSRYB103K50
	C5562,C5563,C5665,C5666,C5675	CKSRYB223K50
	C5952	CKSRYB223K50
	C5676 CHIP VARISTOR	VCX1001
RESISTORS		
	All Resistors	RS1/16S###J
OTHERS		
	CN5601 15P FFC CONNECTOR	52044-1545

Mark	No.	Description	Part No.
	5951	REMOTE RECEIVER UNIT	GP1UM27XK
		FL HOLDER	VNF1122
	V5601	FL TUBE	XAV3021

FM/AM TUNER UNIT

FM/AM TUNER UNIT has no service part.

6. ADJUSTMENT

6.1 ADJUSTMENT ITEMS AND LOCATION

■ Adjustment Items

[Mechanism Part]

❶ Tangential and Radial Height Coarse Adjustment

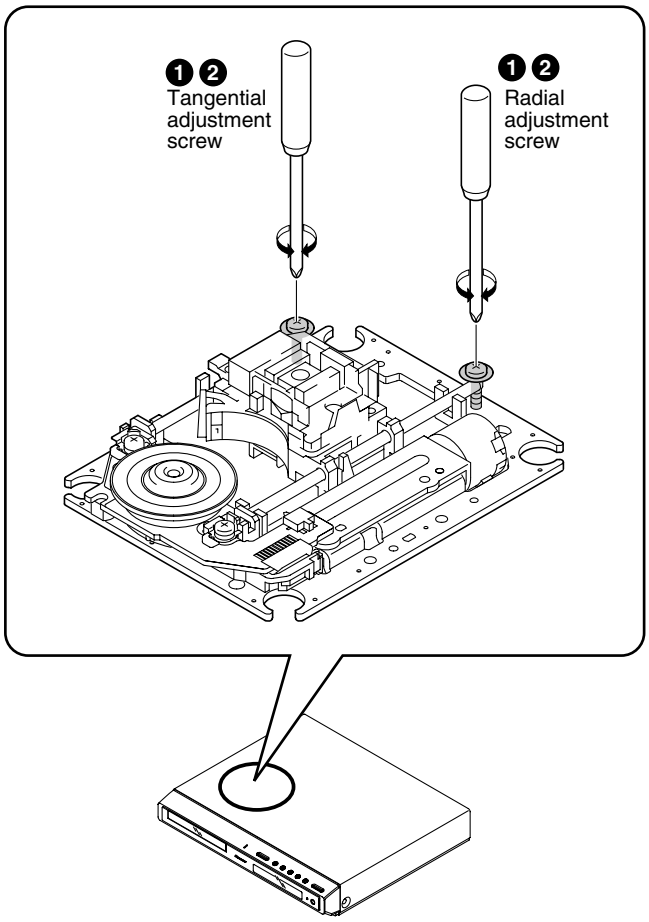
❷ DVD Jitter Adjustment

[Electrical Part]

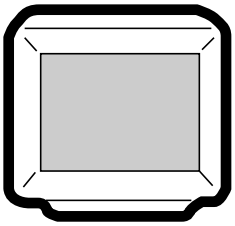
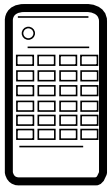
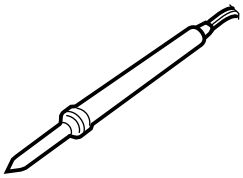
Electrical adjustments are not required.

■ Adjustment Points (Mechanism Part)

Cautions: After adjustment, adjustment screw locks with the Screw tight.



6.2 JIGS AND MEASURING INSTRUMENTS

⊕ Screwdriver (large)	⊕ Screwdriver (medium)	 TV monitor	 Test mode remote control unit (GGF1381)
⊕ Precise screwdriver	DVD test disc (GGV1025)	 Soldering iron	Screw tight (GYL1001)

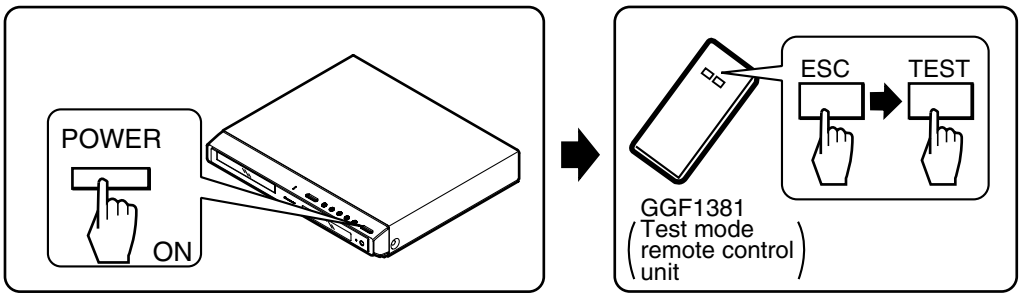
6.3 NECESSARY ADJUSTMENT POINTS

When	Adjustment Points	
■ Exchange Parts of Mechanism Assy		
Exchange the Pickup	Mechanical point	❶, ❷ ＊ After adjustment, screw locks with the Screw tight.
	Electric point	———
Exchange the Traverse Mechanism	Mechanical point	———
	Electric point	———
Exchange the Spindle Motor	Mechanical point	❷ ＊ After adjustment, screw locks with the Screw tight.
	Electric point	———
■ Exchange PCB Assy		
Exchange PC Board LOAB and DVDM ASSY	Mechanical point	———
	Electric point	———

6.4 TEST MODE

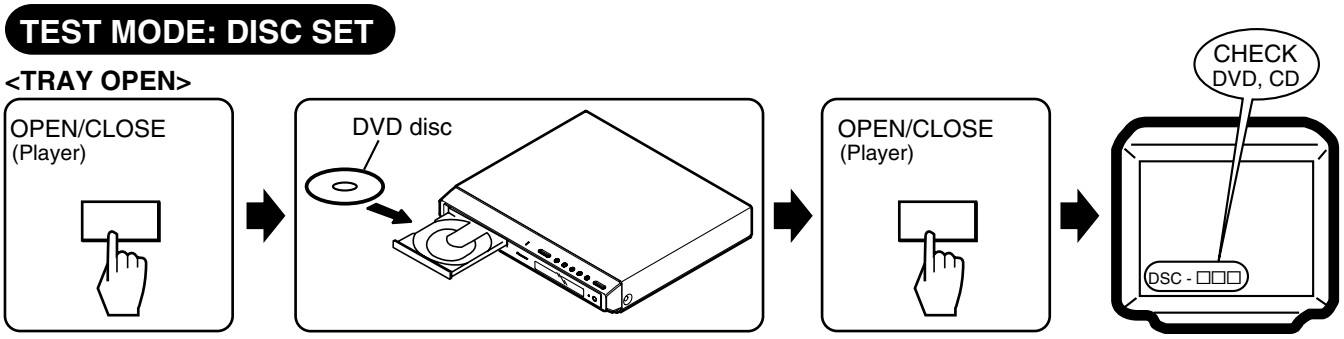
• The TEST MODE functions that are used only during adjustment are described here. For details, see "7.1.1 TEST MODE".

TEST MODE: ON



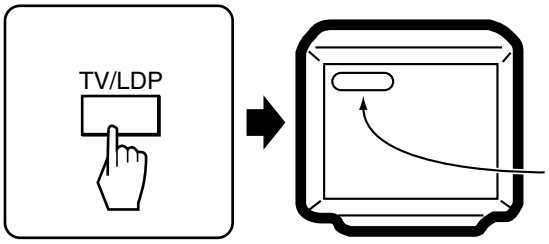
TEST MODE: DISC SET

<TRAY OPEN>



TEST MODE: PLAY

<PLAY>

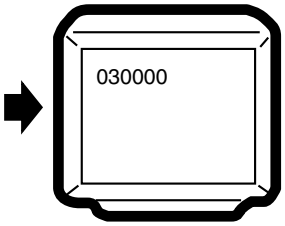


CAUTION:
Perform only trace, video and audio outputs are nothing.

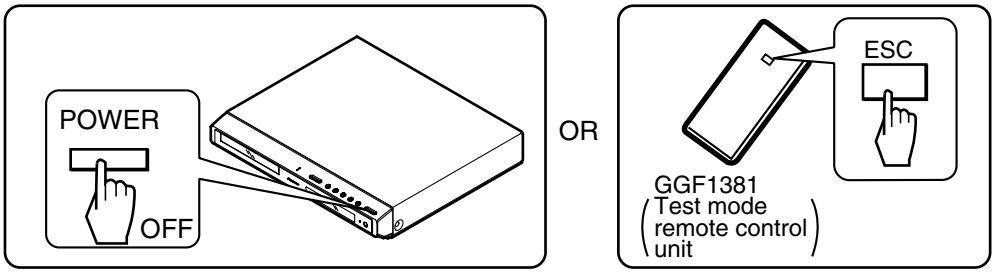
< When playback with the target address of disc (DVD)>

For example, when playback with # 30000

During PLAY [+10] ➡ [3] ➡ [0] ➡ [0] ➡ [0] ➡ [0] ➡ [CHP/TIM] Press keys in order



TEST MODE: OFF

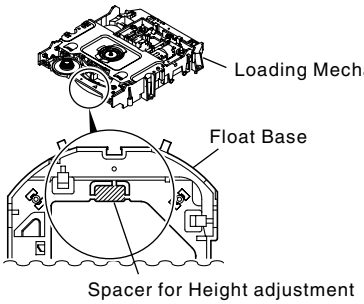


6.5 MECHANISM ADJUSTMENT

1 Tangential and Radial Height Coarse Adjustment

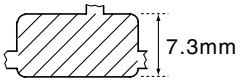
START

- Remove the Loading Mecha. Assy.
- Remove a Spacer for height adjustment attached to the back side (shaded area) of the Loading Mecha. Assy (Float Base) with nippers.

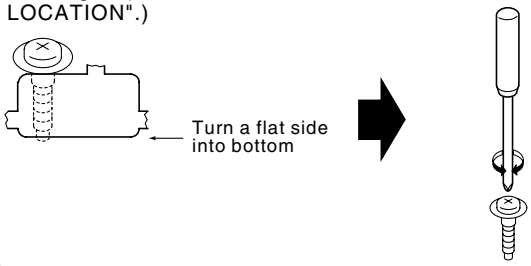


Note:
Before removing the flexible cable for the pickup, soldering of the pickup circuit is necessary.
For details, see "7.1.11 DISASSEMBLY".

Cautions:
Because there is not a Spacer for height adjustment in adjustment after the second time, will keep it at need.
(This parts is Traverse mechanism exclusive use of a model for 2003 years)



Put a spacer between a Tangential (or Radial) adjustment screw and Mechanism Base and turn each screw to adjust the height. (Refer to "6.1 ADJUSTMENT ITEMS AND LOCATION".)



2 DVD Jitter Adjustment

- Playback method of inner and outer address for the purpose is refererd to "6.4 TEST MODE".
- Jitter indication of the monitor is refererd to "7.1.2 DISPLAY SPECIFICATION OF THE TEST MODE".

Use disc: GGV1025

START

- Test mode
- Play the DVD test disc at outer track (around #200000)

Mechanism Assy

Adjust the Tangential Adjustment Screw so that jitter becomes minimum.

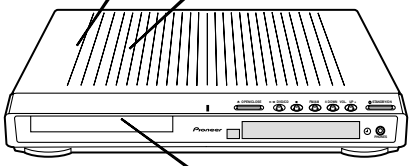
J : Min

- Play the DVD test disc at inner track (around #30000)

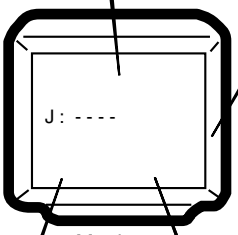
Mechanism Assy

Adjust the Radial Adjustment Screw so that jitter becomes minimum.

J : Min



Player



Monitor

- Play the DVD test disc at outer track (around #200000)

Mechanism Assy

Readjust the Tangential Adjustment Screw so that jitter becomes minimum.

J : Min

CHECK

Confirm the error rate that is displayed "OK"

(Example ERROR RATE: 6.6oe - 6 OK)

NG

Turn the POWER OFF in case of NG once, and perform the adjustment once again.

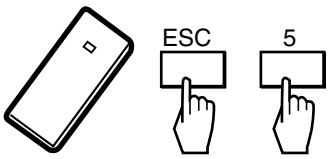
OK

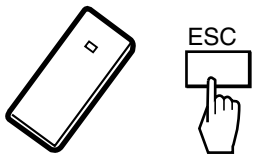
If error rate is OK, locks a root of tangential and radial adjustment screws with the Screw tight.

Screw tight: GYL1001

Disc playback normally.

- The measurement of block error rate





Test mode end

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 TEST MODE

■ Test Mode Functional Specification

① Test mode entry

In the power ON state, press the [ESC] (A8-5F) key and [TEST / RANDOM] (A8-5E) key in order of the Test mode remote control unit.

- Light the all FL and LEDs, and goes out the FL and LEDs when pressing the keys of something.
- OSD displays test mode. Refer to the "7.1.2 DISPLAY SPECIFICATION OF THE TEST MODE".

② Release the Test mode

- Turn off the power.
- Press the [ESC] (A8-5F) key of the remote control unit and reset it.

③ Tray open / close

- Press the [REPEAT A-B] (A8 - 48) key of the remote control unit.
- Press the [OPEN / CLOSE] key of the main unit from the stop state.

④ Playback stop

1. Press the [REPEAT] (A8 - 44) key of the remote control unit from the playback state.
2. Press the [STOP] key of the remote control unit or main unit from the playback state.
   (Playback stops, but the loaded disc keeps rotating.)

⑤ LD ON

DVD : Press the [TEST] (A8-5E) and [1] (A8-01) keys in order, and turn on the laser diode (650n).
CD : Press the [TEST] (A8-5E) and [4] (A8-04) keys in order, and turn on the laser diode (780n).

⑥ Focus on / sweep

1. Lock the focus by pressing the [TEST] (A8-5E) and [2] (A8-02) keys in order.
2. Repeat focus sweep by pressing the [TEST] (A8-5E) and [3] (A8-03) keys in order.

⑦ Spindle FG servo

CAV : Press the [TEST] (A8-5E) and [5] (A8-05) keys in order,then rise up the spindle and FG servo becomes on.
CLV : Press the [TEST] (A8-5E) and [9] (A8-09) keys in order,then rise up the spindle and FG servo becomes on.

⑧ Tracking open / close

1. Open tracking by pressing the [STEP FWD] (A8-54) key of the remote control unit in the play state.
2. Close tracking by pressing the [STEP REV] (A8-50) key of the remote control unit in the play state.

⑨ Slider servo on/off

1. Turn on the slider servo by pressing the [TEST] (A8-5E) and [CX] (A8-0E) keys in order.
2. Turn off the slider servo by pressing the [TEST] (A8-5E) and [TV/LDP] (A8-0F) keys in order.

⑩ Slider in / out

Slider in : In the tracking off state, press the [SCAN REV] (A8-11) key of the remote control unit.
Slider out : In the tracking off state, press the [SCAN FWD] (A8-10) key of the remote control unit.

⑪ Play (perform only the ID search and trace to the specified location)

Press the [TV/LDP] (A8-0F) key of the remote control unit from the stop state.
Perform only trace, video and audio outputs are nothing.

⑫ Screen display ON/OFF

1. Turn off the display by pressing the [AUDIO] (A8-1E) key of the remote control unit.
2. Turn on the display by pressing the [DISPLAY] (A8-43) key of the remote control unit.

⑬ Search

1. Search address input entry

- It becomes the address input mode when pressing the [+10] (A8-1F) key. (Most significant digit of an address displays "<".)
- In this time, display the last address as the initial state.

2. Search address input

- Press the [0] to [9] (A8-00 to 09) keys of the remote control unit. In the DVD, set an address with hexadecimal.
- In the address input mode, turn to the hexadecimal input by pressing the [PROGRAM] (A8-4C) key (display a "∗" mark), and [1] to [6] keys are each input as A to F.
- Hexadecimal input and decimal input can switch with toggle.
- In case of CD, perform only the absolute time search.

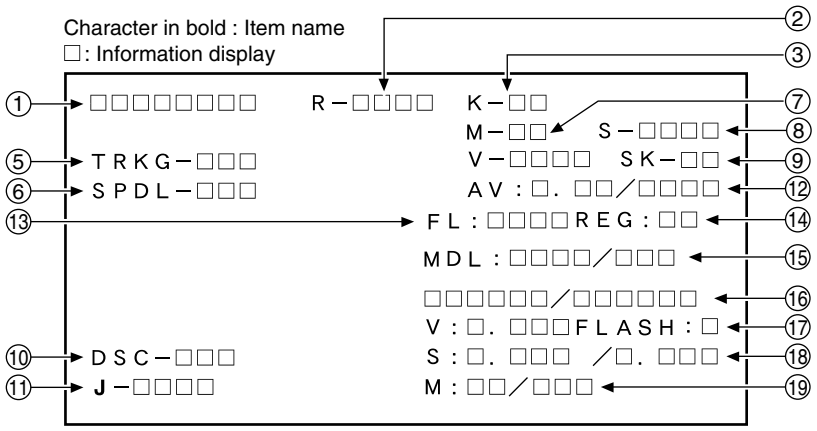
3. Search execution

- Press the [CHP/TM] (A8-13) key of the remote control unit.
- After the search, perform only trace and video and audio outputs are nothing.

4. Release the Search address input

- Clear the address by pressing the [CLEAR] (A8-45) key. Release the address input mode when pressing the [CLEAR] key once again.

7.1.2 DISPLAY SPECIFICATIONS OF THE TEST MODE



① **Address indication**
The address being traced is displayed in number.
(as for the DVD, indication of decimal number is possible.)
DVD : ID indication (hexadecimal number, 8 digits)
[＊＊＊＊＊＊＊＊]
CD : A-TIME (min. sec.) [0 0 0 0 ＊＊＊＊]

② **Code indication of remote control unit [R – ＊＊＊＊]**
In case of double code, display a 2nd code.

③ **Main unit keycode indication [K – ＊＊]**

⑤ **Tracking status [TRKG – ＊＊＊]**
Tracking on : [ON]
Tracking off : [OFF]

⑥ **Spindle status [SPDL – ＊＊＊]**
[OFF], [ACC/BRK], [CAV], [CLV]

⑦ **Mechanism (loading) position value [M – ＊＊]**
Unknown : [01] or [41]
Open state : [04]
Close state : [08]
During opening : [12]
During closing : [22]

⑧ **Slider position [S – ＊＊＊＊]**
In Side Switch ON : [01]
In Side Switch OFF : [00]

⑨ **Output video system [V – ＊＊＊＊]**
NTSC system : [NTSC]
PAL system : [PAL]
Automatic setting : [AUTO]

Scart terminal output [SK – ＊＊]
(Display only the WY model which can do the output setting of scart terminal.)
VIDEO : [00]
S-VIDEO : [01]
RGB : [02]

⑩ **Disc sensing [DSC – ＊＊＊]**
The type of discs loaded is displayed.
[DVD], [CD], [VCD], [ ]

⑪ **Jitter value [J – ＊＊＊＊]**

⑫ **Version of the AV-1 chip / version of firmware [AV: ＊＊ / ＊＊＊＊＊＊＊＊]**

⑬ **Version of the FL controller [FL: ＊＊＊＊]**

⑭ **Region setting of the player [REG: ＊]**
Setting value : [1] to [6]

⑮ **Destination setting of the FL controller [MDL: ＊＊＊＊ / ＊＊＊]**
Four characters in the front represent the type of model.
Three characters in the back represent the destination code.
J: /J, K: /KU, /KC, /KU/KC, R: /RL/RD, RAM : /RAM,
LB: /LB, WY: /WY

⑯ **Part number of the flash ROM and system controller [＊＊＊＊＊＊ / ＊＊＊＊＊＊]**

⑰ **Version of the flash ROM [V: ＊. ＊＊＊]**
Flash ROM size [FLASH = ＊＊]

⑱ **Revision of the system controller [S: ＊. ＊＊＊ / ＊. ＊＊＊]**
version . revision / build number of the ST core

⑲ **Revision of the DVD mechanism controller [M: ＊＊ / ＊＊＊]**
Kinds of version / firmware of the FE.
RAM or ROM

7.1.3 FUNCTIONAL SPECIFICATION OF THE SHORTCUT KEY

Only during normal playback, the following shortcut keys can be assigned by pressing a required key after pressing the ESC key of the remote control unit. To quit, press the ESC key

Command Contents	Conditions	Remote Control Key Name	Remote Control Code
Memory clear and resion / revision indication		CLEAR (∗1)	A8-45
Average value measurement of DVD error rate		5 (∗1)	A8-05
CD error rate measurement		5 (∗1)	A8-05
Aspect : Pan scan		2	AF-A2
Aspect : Letter box		3	AF-A3
Aspect : Wide		4	AF-A4
Digital : AC3		5	AF-A5
Digital : AC-3 > PCM		6	AF-A6
Virtual surround : OFF	Only for models having the corresponding functions	7	AF-A7
Virtual surround : TruSurround		8	AF-A8
Digital output ON		REPEAT A	AF-E8
Digital output OFF		REPEAT B	AF-E4
DTS Digital output ON		STEP FWD	AF-B7
DTS Digtal output OFF		STEP REV	AF-B8
Scart terminal output : VIDEO	WY, models equipped with Scart terminal	AUDIO	AF-BE
Scart terminal output : S-VIDEO		SUBTITLE	AF-36
Scart terminal output : RGB		ANGLE	AF-B5
Progressive OFF	Only for progressive models	R_SKIP	A3-9D
Progressive ON		F_SKIP	A3-9C
Audio 5.1 CH ON	Only for models having the corresponding functions	KD_ENTER	AF-EF
FL indication of EDC / ID error		CX (∗1)	A8-0E
FL indication of ID number		STEREO (∗1)	A8-4A
ZOOM ON (X4)		ZOOM	AF-37
ZOOM OFF		< X3 (∗1)	A8-59
Service mode indication (error rate indication, etc.)		CHP/TIM (∗1)	A8-13
Model information indication		CHAP (∗1)	A8-40
Background color change		+10 (∗1)	A8-1F
Audio last stage mute ON		9	AF-A9
Audio last stage mute OFF		0	AF-A0
Title search Input mode IN Title No. input Search execution		SIDE A (∗1) Numbers (∗1) PLAY (∗1)	A8-4D A8-00 to A8-09 A8-17
Region confimation mode		AUDIO (∗1) Numbers (∗1)	A8-1E A8-01 to A8-08

∗1 : Test mode remote control unit

• Service mode indication (ESC + CHP/TIM keys)
ID Address
The error rate is always displayed in exponential notation, e.g., ∗.∗ ∗ e - ∗, for both DVDs and CDs.
EDC/ID/AV 1 error history (ID Address, EDC/ID/AV 1 Error, last eight errors)
Self-diagnosis functions (If a mechanical error has occurred, the mechanical-error history is also displayed.)

• Calculation of the average error rate (ESC + "5" [Test mode remote control unit] keys)
The average of the last eight error rates is calculated and indicated in exponential notation. After the calculation is completed, "OK" or "NG" is displayed. If "NG" is displayed, the disc tray will open (for both DVDs and CDs)
For DVDs: OK with 5.0e-4 or less, for CDs: OK with 7.6e-3 or less

• Indication of model information (ESC + CHAP keys)
The items from 12 to 19 of the TEST MODE Indications are displayed. However, in the indications, S in the standard test mode is changed to B.E VERSION, and M is changed to F.E VERSION. For details, see 7.1.4.

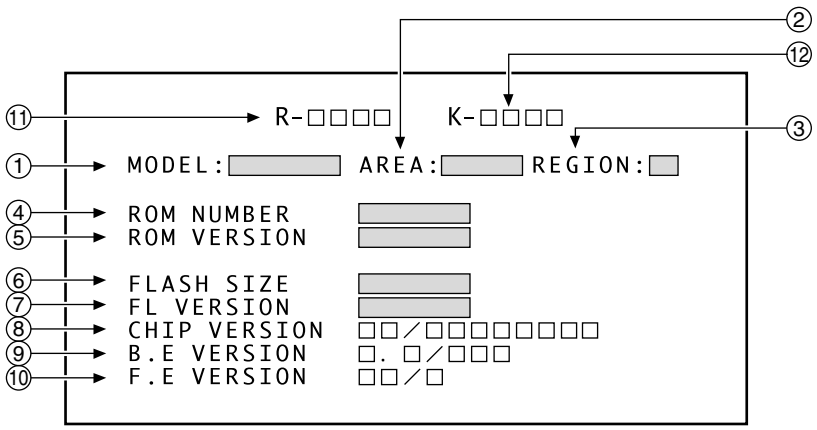
• Change of the background colors (ESC + "+10" [Test mode remote control unit] keys)
Every time the keys are pressed, the background color is changed between blue and green alternately.
(The green background is used in SETUP NAVIGATOR.)

• Region confirmation mode (ESC + AUDIO [Test mode remote control unit] + "1"-"8" [Test mode remote control unit] keys)
After you press the AUDIO key while holding the ESC key pressed and then input the region number, if the number is different from that set in the unit, an error message is displayed, and the tray opens.

7.1.4 SPECIFICATION OF MODEL INFORMATION DISPLAY

To display model information : Press the ESC key then the CHAP key.
To close the model information display : Press the ESC key.

• **Display contents**



Character in bold : Item name
□: Information display

① **Model name**
Display it according to model information set from the FL controller.
② **Destination indication**
Display it according to model information set from the FL controller.
③ **Region No.**
④ **Part number**
⑤ **ROM version**
⑥ **Flash size**
⑦ **FL controller version**

⑧ **CHIP VERSION**
Version of ST CHIP
CUT ID / JTAG ID
(two columns) (eight columns)
⑨ **B.E VERSION**
Version of BACK END (version of ST core software)
□.□ /□□□
softwareVersion . softwareRevision / buildNumber
⑩ **F.E VERSION**
Version of FRONT END (version of mechanism controller CHIP software)
□□/ □
MainVersion / Kinds of firmware RAM or ROM
⑪ **Remote control code**
⑫ **Key code of Main unit**

7.1.5 FUNCTIONAL SPECIFICATION OF THE SERVICE MODE

• EDC / ID error FL display (shortcut function)

EDC/ID error is displayed on the FL display if you press the CX key while holding the ESC key on the TEST MODE remote control unit pressed. To quit while an EDC/ID error is displayed, press the ESC key.

FL display

00 /00 / 01 ∗

∗: Lights when an AV1 error was generated at least once.

Number of sites where an EDC or ID error was generated

Number of retrials while an ID error is being generated
(only displayed at the moment when an error is being generated),
and for the ST models, the number of retrials made for the latest ID error

Number of retrials while an EDC error is being generated
(only displayed at the moment when an error is being generated),
and the number of retrials made for the latest EDC error

• Display during Service Mode

To enter Service Mode, press the CHP/TIM key while holding the ESC key pressed.
To quit, press the ESC key.

Service mode display

① ID Address

② Error rate (always displayed), in exponential notation

∗∗ (∗∗∗∗)

Number of error rates

02: Indicates use of the same method as for the 02 models,
No indication: Indicates use of the method used for models before the 02 model

③ EDC/ID/AV1 error history (ID Address, EDC/ID/AV1 errors, last eight errors)

Description of AV1 errors
BIT0: In BE code, an EDC error, FEC I/F buffer overflow, or "not valid" is generated (B.E error)
BIT1: In BE code, the ID is different from that of the target (B.E error)
BIT2: An error was generated in FE-added 2-byte EDC data. (F.E error)

④ Self-diagnosis functions

Whether F.E is normal or not is checked.

FE OK: No abnormality in F.E
FE Error: Abnormality is recognized in F.E.
Pressing the CHP/TIM key again displays the mechanical error history. Each press of the CHP/TIM key changes the displays between the mechanical error history and the Service Mode display.
For details on the mechanical error history, refer to the addendum.

Indication plan contents

AV1 ERR	BIT 2	1	0
00	0	0	0
01	0	0	1
02	0	1	0
03	0	1	1
04	1	0	0
05	1	0	1
06	1	1	0
07	1	1	1

Character in bold : Item name
□: Information display

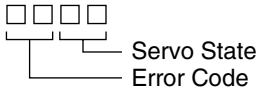
7.1.6 MECHANICAL ERROR HISTORY

■ Mechanical Error History

Only if a mechanical error (FE error) has been generated, a mechanical error history containing up to the last eight errors is displayed if you press the "ESC" + "CHP/TIM" key in Normal Mode.
Errors are displayed in descending order, with the latest one at the top.

Description of the mechanical error history

① Error number
The first two digits are for the error code, and the second two digits are for the servo state.

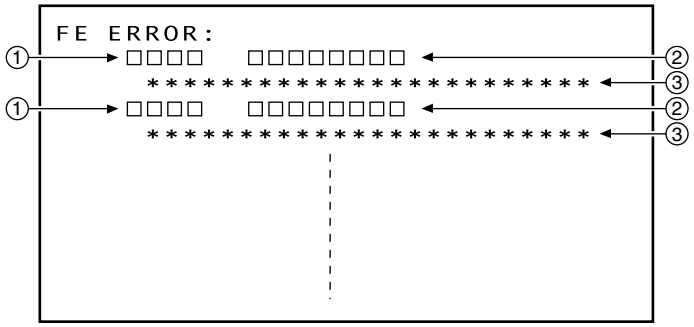


② Error number
The elapsed time from the time when the system was turned on until an error was generated is displayed.
Note: If a later error time is shorter than the previous error time, it means that the unit was turned off then on again.

③ Description of errors
Error messages are displayed.
Example: If the error code is 0x13 (Focus lost timeout) and the servo state is 0x05 (Disc judge), the message becomes "Focus lost timeout in Disc judge."

Note: When an error has been generated, if the servo state is "Disc judge," the disc tray opens, and if the servo state is other than "Disc judge," the unit stops (excluding a case of a device error with the error code 0xd∗).

Indication contents



• List of the error codes

FOCUS ERROR	0x0∗	**FOCUS TIMEOUT**	0x1∗
Focus on error	0x01	Focus on timeout	0x11
Focus off error	0x02	Focus off timeout	0x12
Focus lost error	0x03	Focus lost timeout	0x13
Focus balance adjust error	0x04	Focus balance adjust timeout	0x14
Focus gain adjust error	0x05	Focus gain adjust timeout	0x15
Focus sweep error	0x06	Focus sweep timeout	0x16
Focus reflection error	0x07	Focus reflection timeout	0x17
TRACKING ERROR	0x2∗	**TRACKING TIMEOUT**	0x3∗
Tracking on error	0x21	Tracking on timeout	0x31
Tracking off error	0x22	Tracking off timeout	0x32
Tracking lost error	0x23	Tracking lost timeout	0x33
Tracking balance adjust error	0x24	Tracking balance adjust timeout	0x34
Tracking gain adjust error	0x25	Tracking gain adjust timeout	0x35
STEPPING ERROR	0x4∗	**STEPPING TIMEOUT**	0x5∗
Stepping on error	0x41	Stepping on timeout	0x51
Stepping off error	0x42	Stepping off timeout	0x52
Stepping lost error	0x43	Stepping lost timeout	0x53
Stepping move error	0x44	Stepping move timeout	0x54
SPINDLE ERROR	0x6∗	**SPINDLE TIMEOUT**	0x7∗
Spindle on error	0x61	Spindle on timeout	0x71
Spindle off error	0x62	Spindle off timeout	0x72
Spindle lost error	0x63	Spindle lost timeout	0x73
Spindle CAV error	0x64	Spindle CAV timeout	0x74
Spindle CLV error	0x65	Spindle CLV timeout	0x75
ACQUISITION ERROR	0x8∗	**ACQUISITION TIMEOUT**	0x9∗
PLL lost error	0x83	PLL lost timeout	0x93
DECODER ERROR	0xa∗	**DECODER TIMEOUT**	0xb∗
ID lost error	0xa3	ID lost timeout	0xb3
DEVICE ERROR	0xd∗		
SRAM error	0xd1		

• List of the servo states

0x00	Reset
0x01	Stop (inside position)
0x02	Stop (any position)
0x03	Braking for stop
0x04	New disc
0x05	Disc judge
0x06	Reserved 1
0x07	Playing
0x08	Start up
0x09	Seeking
0x0A	Pausing
0x0B	Reading BCA
0x0C	Reserved 2
0x0D	
0x0E	Tray open
0x0F	Tray moving

Note : 0 x □□
code
(Only this part is displayed to a display)

ERROR CODE TABLE

Error Name	No.	Causes	Check Item	Possibility of Trouble	Remarks
FOCUS ERROR (0 x 0∗)					
Focus on error	0 x 01	Focus on could not be completed	Are not there a dirt or a scratch in the Disc? Does LD become weak? Does the lens move up and down?	1. Pickup 2. Driver 3. Front End IC	
Focus off error	0 x 02	Focus off could not be completed	Unknown		
Focus lost error	0 x 03	Focus servo is lost	Are not there a dirt or a scratch in the Disc? Does LD become weak?	1. Pickup	
Focus balance adjust error	0 x 04	AFB on could not be completed			
Focus gain adjust error	0 x 05	Focus AGC could not be completed			
Focus sweep error	0 x 06				
Focus reflection error	0 x 07	Dimensions of S curve did not reach to the aim value	Does LD become weak?	1. Pickup	
FOCUS TIMEOUT (0 x 1∗)					
Focus on timeout	0 x 11	Did timeout at focus on	Are not there a dirt or a scratch in the Disc? Does LD become weak? Does the lens move up and down?	1. Pickup 2. Driver 3. Front End IC	
Focus off timeout	0 x 12	Did timeout at focus off			
Focus lost timeout	0 x 13	Did timeout at focus backup			
Focus balance adjust timeout	0 x 14	Did timeout at AFB			
Focus gain adjust timeout	0 x 15	Did timeout at AGC			
Focus sweep timeout	0 x 16				
TRACKING ERROR (0 x 2∗)					
Tracking on error	0 x 21	Tracking on could not be completed		1. Pickup 2. Driver 3. Front End IC	
Tracking off error	0 x 22	Tracking off could not be completed			
Tracking lost error	0 x 23	Tracking servo is lost		1. Pickup	
Tracking balance adjust error	0 x 24	ATB could not be completed		1. Pickup	
Tracking gain adjust error	0 x 25	AGC could not be completed		1. Pickup	
Tracking jump error	0 x 26	Tracking jump could not be completed			
TRACKING TIMEOUT (0 x 3∗)					
Tracking on timeout	0 x 31	Did timeout at tracking on	Are not there a dirt or a scratch in the Disc?	1. Pickup 2. Driver 3. Front End IC	
Tracking off timeout	0 x 32	Did timeout at tracking off			
Tracking lost timeout	0 x 33	Did timeout at tracking backup	Are not there a dirt or a scratch in the Disc?	1. Pickup	
Tracking balance adjust timeout	0 x 34	Did timeout at ATB		1. Pickup	
Tracking gain adjust timeout	0 x 35	Did timeout at AGC		1. Pickup	
Tracking jump timeout	0 x 36	Did timeout at tracking jump			
STEPPING ERROR (0 x 4∗)					
Stepping on error	0 x 41	Stepping on could not be completed		1. Pickup 2. Driver 3. Front End IC	
Stepping off error	0 x 42	Stepping off could not be completed			
Stepping lost error	0 x 43	Stepping servo is lost			
Stepping move error	0 x 44	Stepping could not move	Do move to inner and outer periphery of the stepping in the test mode? Do indicate "S-04" at the most inner periphery of the stepping?	1. Stepping motor 2. Inside switch 3. Driver	
STEPPING TIMEOUT (0 x 5∗)					
Stepping on timeout	0 x 51	Did timeout at stepping on		1. Pickup 2. Driver 3. Front End IC	
Stepping off timeout	0 x 52	Did timeout at stepping off			
Stepping lost timeout	0 x 53	Did timeout at stepping backup			
Stepping move timeout	0 x 54	Did timeout at stepping movement	Do move to inner and outer periphery of the stepping in the test mode? Do indicate "S-04" at the most inner periphery of the stepping?	1. Stepping motor 2. Inside switch 3. Driver	

Error Name	No.	Causes	Check Item	Possibility of Trouble	Remarks
SPINDLE ERROR (0 x 6*)					
Spindle on error	0 x 61	Spindle on could not be completed			
Spindle off error	0 x 62	Spindle off could not be completed			
Spindle lost error	0 x 63	Spindle lost control			
Spindle CAV error	0 x 64	CAV on could not be completed			
Spindle CLV error	0 x 65	CLV on could not be completed			
SPINDLE TIMEOUT (0 x 7*)					
Spindle on timeout	0 x 71	Did timeout at spindle on			
Spindle off timeout	0 x 72	Did timeout at spindle stop			
Spindle lost timeout	0 x 73	Did timeout at spindle backup	Are not there a dirt or a scratch in the Disc? Is FG output from the driver?	1. Spindle motor 2. Spindle driver	
Spindle CAV timeout	0 x 74	Did timeout at CAV on	Is spindle rotating? Is FG output from the driver? Is the PDM output from L6315?	1. Spindle motor 2. Spindle driver 3. Front End IC	
Spindle CLV timeout	0 x 75	Did timeout at CLV on			
ACQUISITION ERROR (0 x 8*)					
PLL lost error	0 x 83	PLL is lost	Are not there a dirt or a scratch in the Disc?	1. Pickup 2. Front End IC	
ACQUISITION TIMEOUT (0 x 9*)					
PLL lost timeout	0 x 93	Did timeout at PLL backup	Are not there a dirt or a scratch in the Disc?	1. Pickup 2. Front End IC	
DECODER ERROR (0 x a*)					
ID lost error	0 x a3	ID is not readable	Are not there a dirt or a scratch in the Disc?	1. Pickup 2. Front End IC	
DECODER TIMEOUT (0 x b*)					
ID lost timeout	0xb3	Did timeout at ID backup	Are not there a dirt or a scratch in the Disc?	1. Pickup 2. Front End IC	
DEVICE ERROR (0 x d*)					
SRAM error	0 x d1	Cannot access SRAM	Power supply of SRAM Is not bus line short-circuiting?	1. SRAM 2. Front End IC 3. Front End-SRAM bus line	
FAILSAFE (0 x e*)					
Unexpected error	0 x e1	Unexpected error		1. software runaway 3. Software bug	

■ Protection Specifications and Service Mode

• Protection Specifications

The system microcomputer (CONTRL Assy IC5501) for this unit always monitors if abnormality of the power is generated, and as soon as an abnormality is detected shuts off the power. The specifications of the microcomputer terminal for monitoring are as follows:

Name of microcomputer terminal		XPROTECT (Pin 22)	VDET (Pin 17)
Monitoring item		Abnormality of AMP-system power Short-circuiting of the SP terminal, etc.	Abnormality of power inside the DVDM Assy
Voltage at terminal	In normal conditions	0.71× Vdd* or more	0.5 Vdd-0.85 Vdd*
	In abnormal conditions	0.36×Vdd–0.71× Vdd*	
	In failure	0.36×Vdd* or less	0.85 Vdd* or more 0.5 Vdd* or less
Monitoring start time		1.5 sec after power is turned on	1.5 sec after power is turned on
Time required for determining abnormality		0.5 sec after detection	0.5 sec after detection

*Vdd = Approx. 5 V (depending on the unit)

In abnormal conditions or in failure, the TIMER LED flashes after the power is shut off. If the power was shut off because of an abnormality, it can be turned on by pressing the STANDBY/ON key. However, if the power was shut off because of failure, **for one minute after a shutdown the STANDBY/ON key is disabled in order to protect against possible ignition of fumes.** If the AC power cord is pulled out during this one minute of standby, when the AC power cord is reconnected, the STANDBY/ON key will still be disabled until the remaining seconds have elapsed.

This unit has Service Test mode for analyzing the above power abnormality. Its specifications are as follows:

1. Specific conditions for Service Test mode

- VDET is neglected.
- XPROTECT is neglected.
- **Even if the unit is urgently shut down in failure in Normal mode, you can turn it on without waiting for one minute.**

2. How to enter Service Test mode

- While connecting STEST port (IC5501 Pin43) to "+5V", connect AC power cord. (See next page.)

3. How to quit Service Test mode, and the conditions for quitting

- To quit Service Test mode, turn the power off or disconnect the AC power cord.
- When quitting Service Test mode, only data on protection in RAM are cleared.

4. Indications when Service Test mode starts

- Indications on the FL display when Service Test mode starts differ depending on whether the unit was turned off normally or if the unit was urgently shut down because the abnormality of the power, as described below.

[After the power is turned off normally]

FL display `W e l c o m e !`
⇩
FL display `V o l u m e 0`
⇩
FL display `D V S E R V I C E`

[After the power is shut down because of an abnormality in the AMP system]

FL display `P R T C T W N G`
⇩
FL display `V o l u m e 0`
⇩
FL display `D V S E R V I C E`

[After the power is shut down because of a failure in the AMP system]

FL display `P R T C T E R R`
⇩
FL display `V o l u m e 0`
⇩
FL display `D V S E R V I C E`

[After the power is shut down because of a failure in the DVD system]

FL display `D V D P R T E C T`
⇩
FL display `V o l u m e 0`
⇩
FL display `D V S E R V I C E`

5. Operations during Service Test mode

- Basically, operations in Service Test mode are the same as in Normal mode. However, to clarify that it is in Service Test mode, during this mode, when functions are changed, the indications on the FL display become as follows:

[Functions]	[Indications on the FL display]	[Functions]	[Indications on the FL display]
DVD/CD	`D V S E R V I C E`	LINE2	`L 2 S E R V I C E`
TUNER	`T X S E R V I C E`	TV	`T V S E R V I C E`
LINE1	`L 1 S E R V I C E`		

6. Operations during DSP module error diagnosis function

[How to enter DSP module error diagnosis]

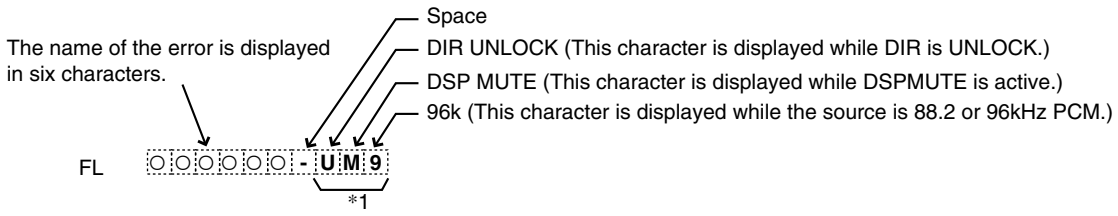
• Press "DISPLAY" button of the accessory remote control in service test mode to show DSP error messages.

[How to quit DSP module error diagnosis]

• Press "DISPLAY" button of the accessory remote control again to select normal service test mode.

For this reason, the usual function of "display" is not effective during Service Test mode.
• DVD total running time/remaining time display is inactive.
• OSD changing on TV is also inactive.

■ Specification of DSP error display

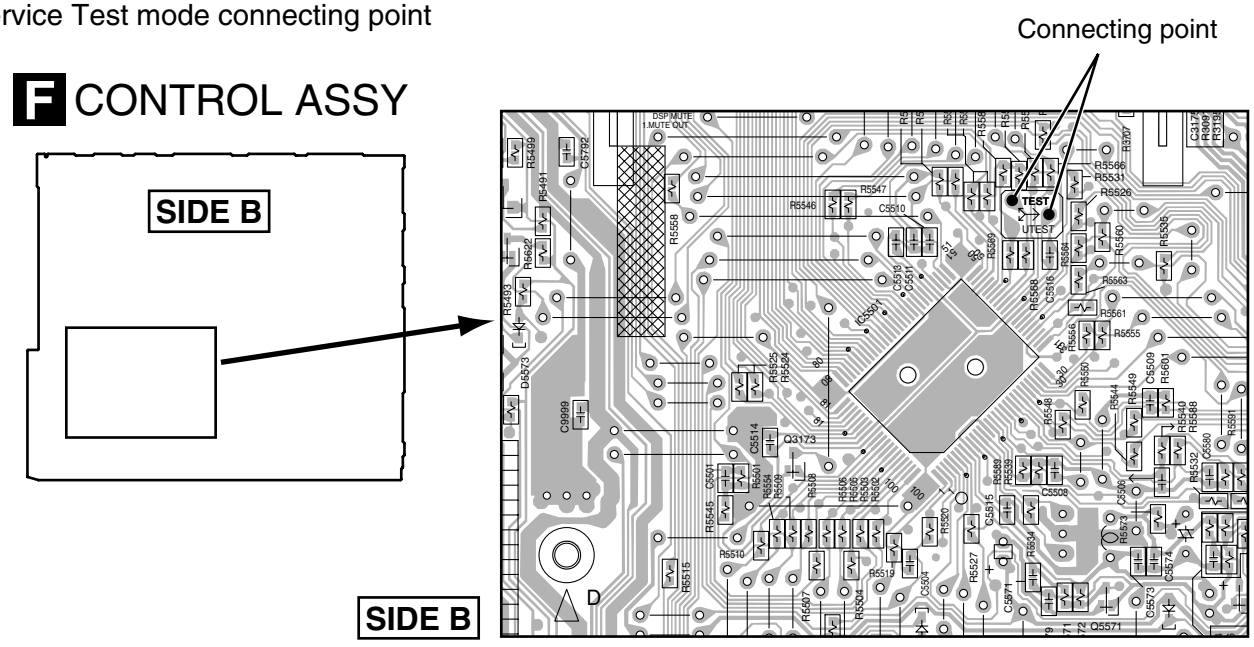

The name of the error is displayed in six characters.
Space
DIR UNLOCK (This character is displayed while DIR is UNLOCK.)
DSP MUTE (This character is displayed while DSPMUTE is active.)
96k (This character is displayed while the source is 88.2 or 96kHz PCM.)
FL
- U M 9
*1

*1 : The "U", "M" and "9" are not displayed synchronizing with the display "ERR_0" - "ERR_4" ("DIRERR",etc), but it depends on the state each time.
The following example display of "ERR_0" - "ERR_4" is just a sample.

[Error]	[Indications on the FL display]
ERR_0	D I R E R R - U M
ERR_1	D S P E R R - U M
ERR_2	H R E Q - U M
ERR_3	D S P N G - U M
ERR_4	D M U T E - M
NO ERR	D S P O K -

Refer to "7.1.10 DSP TROUBLE SHOOTING".

■ Service Test mode connecting point



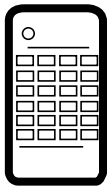
7.1.7 ID NUMBER AND DATA SETTING

Caution:
For the DVD players compatible with DVD-RW, for playback of a DVD-RW disc (CPRM), it is necessary that an individual ID number and ID data are set for each player. If the ID number and ID data be not properly set in the manner described below, future operations cannot be guaranteed. The ID number is written on the yellow label at the rear panel of the player.
If there is no yellow label, before downloading FLASH ROM, take note of the ID number set following the procedures outlined in "ID Number Confirmation Mode" on the next page.

Note: Enter ID numbers while the unit is in Stop mode so that the values set will be immediately written to the flash ROM.

Setting an ID number or ID data is required in the following case:
If "No ID Number!" or "NO ID DATA!" is displayed on the TV screen and on the FL display for a few seconds immediately after the power to the player is turned on or during Stop mode.

JIGS AND MEASURING INSTRUMENTS

 Service Remote Control Unit (GGF1381)	DVD Data Disc (GGV1133) (GGV1174) * Refer to "■ Jigs list".

■ ID Number Input Mode

① To enter ID Number Input Mode, with no ID number set, such as in a case of immediately after upgrading the firmware, press the ESC key then the STEREO key.

Note: If a previous ID number and ID data, such as a factory-preset ID number and ID data, are maintained, the unit enters ID Number Confirmation Mode when the above keys are pressed. However, if only an ID number is maintained, the unit enters ID Data Input Mode.

② Enter a 9-digit ID number. The ID number is also displayed on the FL display.

③ By pressing the CLEAR key without having input a number, you can exit this mode. Each press of this key after a number has been input deletes one digit.

```
[Player's ID Number Setting]
 ID Number ?
② - - - - - - - - -
③ <CLEAR>  Exit

 Input ID Number !
```

④ After entering all 9 digits, if you press the PLAY key, the unit enters Compare mode. Enter the same ID number again. Only if your two input numbers match, the ID number is set. Compare mode helps eliminate mistyping of the ID number.

Note: If you press the PLAY button before inputting a 9-digit ID number, the unit returns to Step ② without doing anything else.

⑤ After entering all 9 digits, if you press the SEARCH key, the unit unconditionally sets the input number as the ID number. Then the unit automatically enters Player's Data Input Mode. (The SEARCH key is not accepted after all 9 digits have been entered.)

```
[Player's ID Number Setting]
 ID Number ?
  0 0 0 0 0 0 0 0 1

④ <PLAY>      Compare Mode
⑤ <SEARCH>  Enter

 Input ID Number !
```

⑥ This display appears when the PLAY key is pressed in Step 4. Enter a 9-digit number to compare. The number is also displayed on the FL display.

⑦ By pressing the CLEAR key without having input a number, the unit returns to Step ② without doing anything else. Each press of this key after a number has been input deletes one digit.

```
[Player's ID Number Setting]
 ID Number ?
    0 0 0 0 0 0 0 0 1
 Compare
⑥   * * * * * * * * *


 Input ID Number !
```

⑧ After entering all 9 digits, if you press the PLAY key, the unit compares the numbers input in Steps ② and ⑥, and only if the numbers match, that number is set as the ID. Then the unit automatically enters ID DATA Input Mode. If the numbers do not match, the disc tray is opened, and the unit exits ID Number Input Mode.

Note: If you press the PLAY button before inputting a 9-digit ID number, the unit returns to Step ⑥ without doing anything else.

```
[Player's ID Number Setting]
 ID Number ?
    0 0 0 0 0 0 0 0 1
 Compare
    0 0 0 0 0 0 0 0 1

⑧ <PLAY>  Enter

 Input ID Number !
```

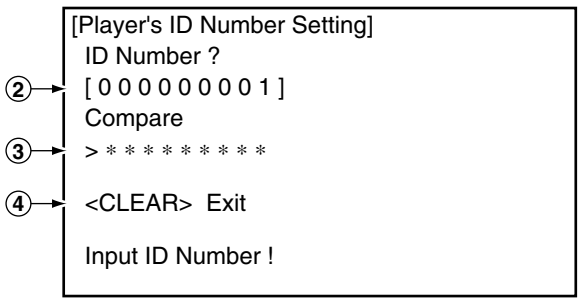
■ ID Number Confirmation Mode

① To enter ID Number Confirmation Mode after the ID number and the ID data are set, press the ESC key then the STEREO key.

② The ID number already set is displayed.
(It is also displayed on the FL display.)

③ Enter a 9-digit number for comparison. This is not required when you only wish to check the ID number visually.
(The number is also displayed on the FL display.)

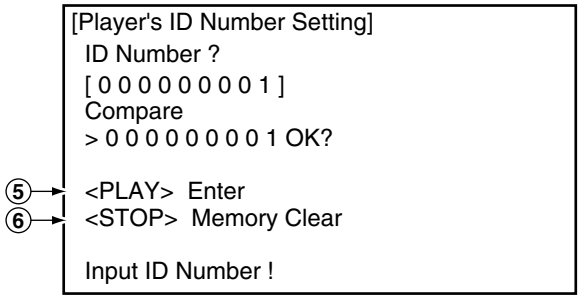
④ By pressing the CLEAR key without having input a number, you can exit this mode. Each press of this key after a number has been input deletes one digit.



⑤ After entering all 9 digits, if you press the PLAY key, the unit compares the number entered in Step ② with the ID number set, and only if the numbers match, the unit automatically exits ID Number Confirmation Mode. If an ID data has not been entered, the unit enters ID DATA Input Mode. If the numbers do not match, the disc tray is opened, and the unit exits ID Number Confirmation Mode.

Note: If you press the PLAY button before inputting a 9-digit ID number, the unit returns to Step ④ without doing anything else.

⑥ After entering all 9 digits, if you press the STOP key, the unit compares the number entered in Step ③ with the ID number set, and only if the numbers match, the unit automatically deletes the ID number and exits this mode. If the numbers do not match, the disc tray is opened, and the unit exits this mode. (The STOP key is not accepted after all 9 digits have been entered.)



• Indication of an ID number already set

An ID number already set is displayed in the following cases:

1) When the ESC key then the CLEAR key are pressed, user settings are cleared, then the ID number set is displayed on the screen. In this case, the ID number is not displayed on the FL display.
2) When the unit enters ID Number Confirmation Mode by your pressing the ESC key then the CLEAR key, the ID number set is displayed. In this case, the ID number is also displayed on the FL display.
   If you only need to confirm the ID number, you can exit this mode by pressing the CLEAR key or turning off the power.

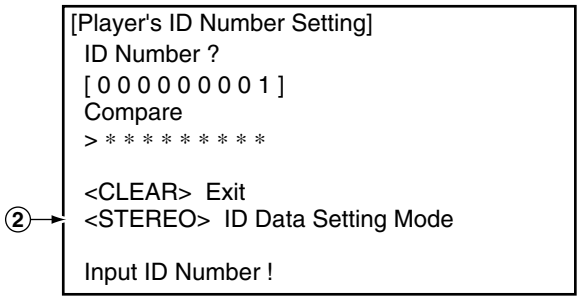
• Indication when no ID number is set

If no ID number is set, the message "No ID Number!" flashes on the screen and FL display for a few seconds after the power is turned on or during Stop mode.

■ ID DATA Input Mode

① To enter ID DATA Input Mode, with the ID number set, press the ESC key then the STEREO key.

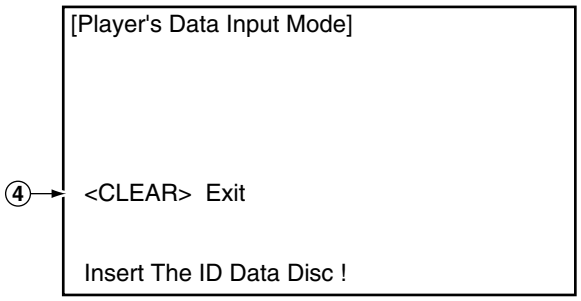
② When the STEREO key is pressed, the unit enters ID DATA Input Mode.



③ If the DVD DATA DISC (GGV1133, GGV1174*) is loaded in this mode, the unit automatically starts reading the data.
(If the ID DISC has already been loaded, the unit does not start reading the data. In this case, open then close the tray.)

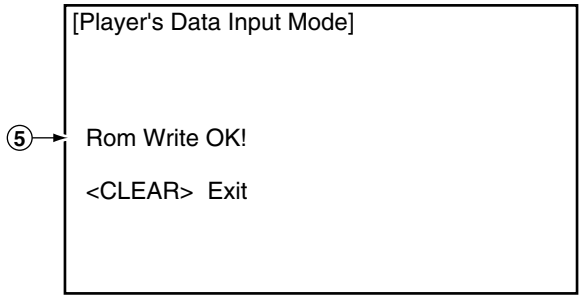
* Refer to "■ Jigs list".

④ To exit this mode, press the CLEAR key. While data are being read from the DVD DATA DISC (GGV1133, GGV1174*), you cannot exit this mode.

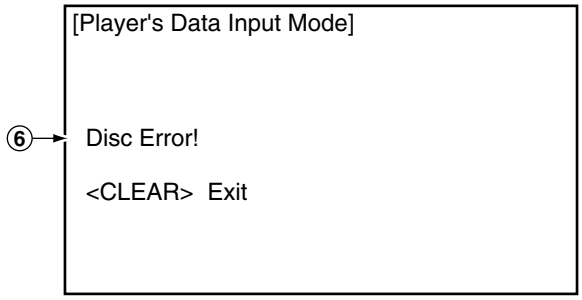


⑤ When writing of the data read from the disc to flash ROM is completed, "Rom Write OK!" is displayed. After seeing this message, you can exit this mode by pressing the CLEAR key.

Note: Whether or not the data have been written to flash ROM can be confirmed by watching for the message "Rom Write OK!" being displayed after the disc is read.



⑥ If the data cannot be read from the disc, "Disc Error!" is displayed on the screen, and the disc is ejected.



• Indication when the data have not been set

If no ID data are set after the ID number is changed, the message "NO ID DATA" flashes on the screen and FL display for a few seconds after the power is turned on or during Stop mode.

7.1.8 METHOD FOR DIAGNOSING DEGRADATION OF THE LDS ON THE PICKUP ASSY

Case when this diagnosis is required :
When playback of any disc, including a test disc (DVD: GGV1025, CD: STD-905), cannot be performed

How to diagnose

In the case mentioned above, degradation of the laser diodes (LDs) mounted on the PICKUP Assy is suspected.
Measure the voltage between the two ends of one of the resistors mentioned below.

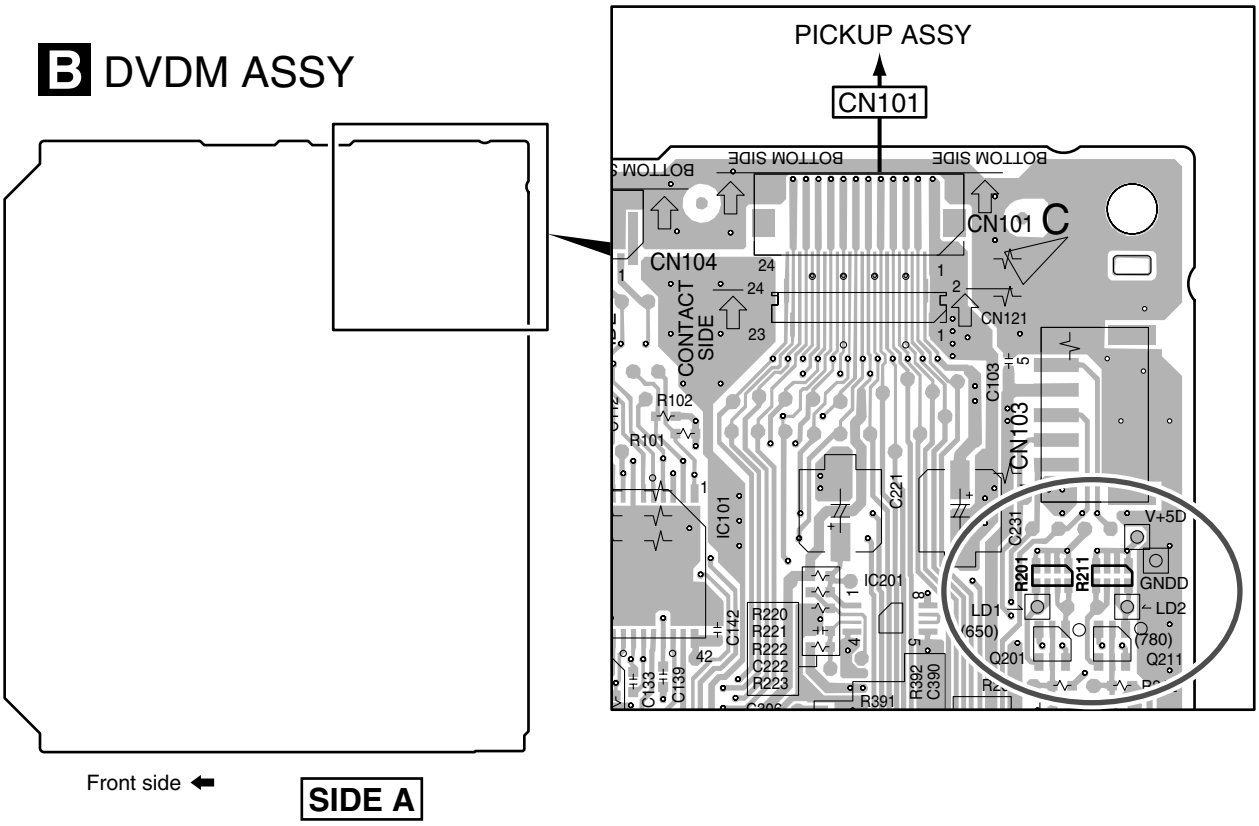
- **No playback of a DVD :**

  Measure the voltage between the two ends of R201 on the DVDM Assy. If the voltage is 0.7 V or higher, the 650-nm LD is degraded.

- **No playback of a CD :**

  Measure the voltage between the two ends of R211 on the DVDM Assy. If the voltage is 1.5 V or higher, the 780-nm LD is degraded.

If the measurements show degradation of an LD, replace the PICKUP Assy.



7.1.9 TROUBLE SHOOTING

Microcomputer Section (CONTROL Assy : IC5501)

Symptom	Possible Cause	Check Method
• The unit cannot be turned on.	The microcomputer was not reset.	Check if the level of the terminal XRESET (Pin 8) is "H." If it is not, check the RESET circuit.
	The AC pulse is not input.	Check if the AC pulse is input to Pin 4 of the AC input terminal. If it is not, check the AC pulse generation circuit.
	The oscillation circuit of the microcomputer does not function.	The microcomputer or the oscillation circuit is broken. Change the microcomputer or the oscillation circuit.
The unit shuts itself off soon after it is turned on.	• If the Function is DVD, the voltage of the VDET input (Pin 17) is either 0.5 Vdd* or less or 0.85 Vdd* or more. • The voltage of the PROTECT input (Pin 22) is 0.71 Vdd* or less.	If the voltage at Pin 17 of the VDET terminal of the microcomputer is either 0.5 Vdd or less or 0.85 Vdd or more, adjust so that it stays between 0.5 and 0.85 Vdd.
• DVD does not operate at all. • Time is not displayed in FL display during DVD function.	Communication with the DVD microcomputer has not been established.	• Check that the terminal (Pins 23-25, 29, and 30) for communication with the DVD microcomputer is live, and if it is not, check if the flexible cable is disconnected. • Check if an "H" signal is output to Pin 93 of the XDVDRST terminal.
All operation keys are disabled.	The unit recognizes that an operation key has already been pressed.	If no operation key has been pressed, check if the voltage at Pins 18 of the KEY input terminal is 5 V. If it is not, check if the operation switch on the line is in failure.

* Vdd= Approx. 5V (depending on the unit)
ex.) 0.85Vdd= 0.85 × 5 (V)
= 4.25 (V)

DVD Section

No.	Symptoms	Diagnosis Contents	Possible Defective Points
1	An opening screen is not displayed on the monitor (The FL display lights. The mechanism does not work.)	Is the level at both IC5501-pin 93 (XDVDRST) and pin 1(DVD ON/OFF) on the CONTROL Assy "H" ?	µcom (CONTROL IC5501)
		Check the voltage of CN901-pin 28 and 29 (VPR+8) on the DVDM Assy.	DVDM Assy CN901
		Check that the following voltages are output : IC411-pin 3 : 1.8V, IC421-pin 3 : 1.8V and IC431-pin 1 : 5V on the DVDM Assy	Each regulator on the DVDM Assy
		Are resonators (27MHz, 20MHz) on the DVDM Assy oscillating ?	Crystal resonator (DVDM Assy X601 and X301)
		Refer to contents of an FE error displayed on the FL display. (SRAM defectiveness, I2C communication line defectiveness, etc.)	FRONT END IC (DVDM IC301)
		• Is a signal input into IC601-pin 132 (CE3) on the DVDM Assy ? (Is a signal fluctuating for several seconds after the power is turned on ?) → Communication with flash ROM • Are the signals input into IC602-pin 16 (SMIWE), pin 19 (SMICS0) and pin 38 (SMICLK) on the DVDM Assy ? (Is a signal fluctuating ?) → Communication with flash ROM	• BACK END IC (DVDM IC601) • Flash ROM (DVDM IC603) • 64M SDRAM (DVDM IC602)
		Is a signal output from IC603-pin 28 (CPU_OE) on the DVDM Assy? (Is a signal fluctuating for several seconds after the power is turned on ?)	• BACK END IC (DVDM IC601) • Flash ROM (DVDM IC603)
		Is a signal input into IC5501-pin 67 (DVDACK) on the CONTROL Assy ? (Is a signal fluctuating ?)	µcom (CONTROL IC5501)
		Is a signal output from IC5501-pin 29 and 30 (SYS_1, 2) on the AF Assy ? (Is a signal fluctuating in the range of 0-5V ?)	µcom (CONTROL IC5501)
		Are the signals output from IC5501-pin 23, 24 and 25 on the CONTROL Assy? (in the range of 0-5V)	µcom (AF IC5501) – BACK END IC (DVDM IC601) communication line
2	An opening screen is not displayed on the monitor (The FL display lights. The mechanism does not work.)	Check the video signal path between BACK END IC (DVDM IC601) and video-out terminal (see the block diagram)	DVDM Assy • Video circuit • after BACK END IC (IC601)
3	A tray cannot be opened. (An opening screen is displayed on the monitor)	• Are wires of CN103 on the DVDM Assy disconnected or damaged ?	Connector / wire LOADING SW (LOAB S101)
		• Is a LOAD-DRVC signal reaching ? • Does the voltage of CN105 pin 1 change by pressing the Inside switch.	BACK END IC (DVDM IC601) Inside switch

No.	Symptoms	Diagnosis Contents	Possible Defective Points
4	Playback impossible (no focusing)	Are the signals output from IC101-pin 34 (F_DRV) and pin 35 (F_RTN) on the DVDM Assy ?	FTS Driver IC (DVDM IC101)
		Does 650-nm LD emit light ? Does a pickup lens move up / down ? Does an actuator spring bend ?	Pickup
		• Are plastic parts damaged? Or is a shaft detached? • Is the turntable detached or tilted?	Mechanism section
		Is flexible cable of CN101 on the DVDM Assy disconnected or damaged ?	Flexible cable / connector
		Is signal output from IC301-pin 33 (FACT) on the DVDM Assy ? (Device control of about 2.6 V is output usually. It is fluctuated by about ± 100 mV with focus up / down.)	FRONT END IC (DVDM IC301)
5	Playback impossible (Spindle does not turn)	Are the signals output from IC101-pin 12 (A3), pin 13 (A2) and pin 14 (A1) on the DVDM Assy ? Is pin 41 fixed LOW and is pin 38 fixed HIGH ?	FTS Driver IC (DVDM IC101)
		Is there any part detached from the spindle motor? Or Is there any foreign object lodged in it?	Mechanism section (Spindle motor)
		Are wires of CN105 (DVDM Assy) disconnected or damaged ?	Flexible cable / connector
		Is signal output from IC301-pin 44 (SPDL_PDM) on the DVDM Assy ?	FRONT END IC (DVDM IC301)
6	Playback impossible (Playback stops)	Does 650-nm LD deteriorate ? If the voltage at both ends of R201 on the DVDM Assy is 0.7 V or more, the 650-nm LD is definitely deteriorated.	650-nm LD deteriorated. (When playback of a DVD is impossible)
		Does 780-nm LD deteriorate ? If the voltage at both ends of R211 on the DVDM Assy is 1.5 V or more, the 780-nm LD is definitely deteriorated.	780-nm LD deteriorated. (When playback of CD is impossible)
		Is there abnormality in FG waveform ?	FG output : FTS Driver IC (DVDM IC101)
		Are there scratches or dirt on the disc ?	Disc
7	Picture disturbance during playback (block noise, freeze, other)	Are there scratches or dirt on the disc ?	Disc
		Is there a problem with the format of the disc?	Disc
8	No sound (Picture is normal)		
		Is signal output from DOUT signal (CN901-pin 21) on the DVDM Assy ?	DVDM CN901-pin 21

7.1.10 DSP TROUBLE SHOOTING

Detectable DSP Errors

The following conditions are assumed,
in order to eliminate causes other than "DSP-assy" and "between DSP-assy and microcomputers".
• Electric power is correctly supplied to DSP-assy.
• The SPDIF signal is coming to the input port of DIR ("COAX IN" RX0 & "OPT IN" RX3 & "DVD" RX7).
• There is no audio output from DSP-assy, or audio output is unusual.
Check the signal route by referring the connection diagram between U-com and DSP module IC (next page).

* "U", "M" display below is a sample.
Those character display ON/OFF depends on the state.

• ERR_0 : –Cannot receive data from DIR– FL DIRERR-UM
→Communication fault has occurred somewhere between DIR (PinNo.32 CDTO)–Level Shifter (IC8702)– µ-com (PinNo.80 DIRDO).
→Communication fault has occurred somewhere between the µ- com-port (*1) which has sent the signal and each IC.

• ERR_1 : –Cannot receive data from DSP– FL DSPERR-UM
→Communication fault has occurred somewhere between DSP (PinNo.144 DSDO)–Level Shifter (IC8702)–µ-com (PinNo.50 DSPDO).
→Communication fault has occurred somewhere between the µ-com-port (*1) which has sent the signal and each IC.
→Communication fault has occurred somewhere between the DIR and DSP.

• ERR_2 : –There is no return value of HREQ.– FL HREQ -UM
→Communication fault has occurred somewhere between DSP (PinNo.3 HREQ)–Level Shifter (IC8702)–µ-com (PinNo.82 DSPHREQ).
→Communication fault has occurred somewhere between the µ-com-port (*1) which has sent the signal and each IC.
→Communication fault has occurred somewhere between the DIR and DSP.

• ERR_3 : –ERR information from DSP– FL DSP NG-UM
→Communication fault has occurred somewhere between the µ-com-port (*1) which has sent the signal and each IC.
(especially the fault inside DSP)
→Communication fault has occurred somewhere between the DIR and DSP.

• ERR_4 : –DECOMUTE continues being LOW(MUTE).– FL DMUTE -M
→Communication fault has occurred somewhere between DSP (PinNo.21 PB12)–Level Shifter (IC8702)–µ-com (PinNo.86 DECMUTE).
→Communication fault has occurred somewhere between the É com-port (*1) which has sent the signal and each IC.
→Communication fault has occurred somewhere between the DIR and DSP.

Although the following are not errors, they are displayed separately and are helpful in finding a solution.
• INFO_0 : –DIRERR is HIGH (UNLOCK) in digital function.– FL DSP OK-UM
If DIRERR continues being HIGH (UNLOCK) without the above-mentioned error display.
→Communication fault has occurred in somewhere between DIR (PinNo.36 INT0)–Level Shifter (IC8702)–µ-com (PinNo.77 DIRERR).
→Check that the external set and this model is properly connected by the digital cable when selecting LINE2 (External Digital) function.

• INFO_1 : –DSPMUTE is LOW (MUTE).– FL DSP OK-M
If DSPMUTE continues being LOW (MUTE) without the above-mentioned error display.
→Communication fault has occurred somewhere between µ-com (PinNo.86 DSPMUTE)–connector (CN8011 and CN8012 No.19 MUTEOUT).

• INFO_2 : –Loading 88.2kHz/96kHz PCM– FL DSP OK-9
DSP function is limited when this information is displayed.

Notes :
Only the high priority error (near to ERR_0) is displayed when the multiplel errors have occurred.

When the analog audio output of a DSP module is unusual but the above error information is not displayed, the fault is probably in the CODEC IC (IC8401) and the peripheral circuits.
As the µ-com has not received data from the CODEC IC, it cannot detect the fault and display the error information.

*1 : μ-com-port which has sent the signal to IC

IC5501 μ-com port			IC8201 DIR port		IC8401 CODEC port	
Pin No.	Pin Name		Pin No.	Pin Name	Pin No.	Pin Name
No.51	DSPCLK	→	No.34	CCLK	No.42	CCLK
No.49	DSPDI	→	No.33	CDTI	No.43	CDTI
No.79	DIRCS	→	No.35	CSN	No.41	CSN
No.78	DIRRST	→	No.31	PDN	No.17	PDN

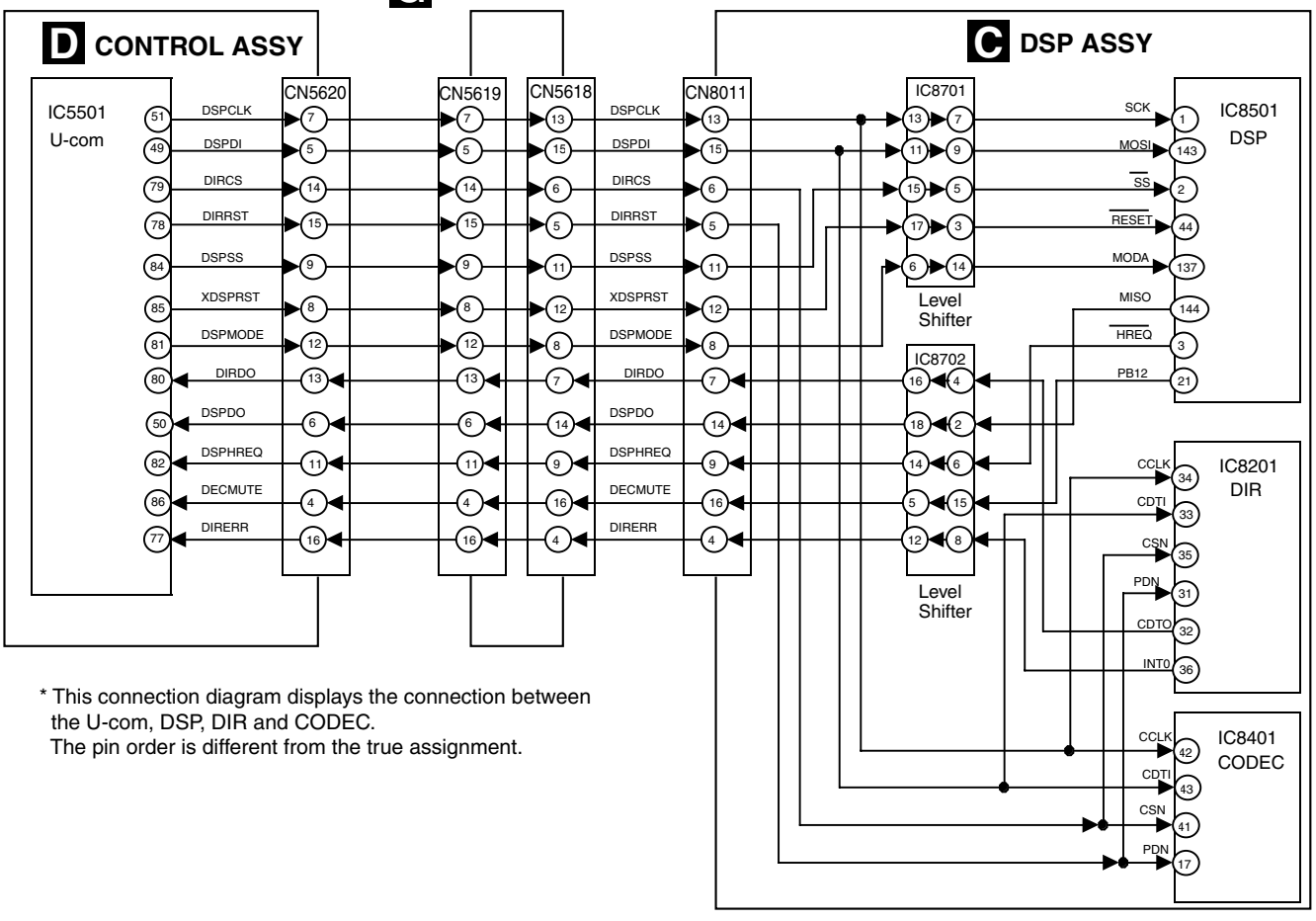
IC5501 μ-com port			IC8501 DSP port	
Pin No.	Pin Name		Pin No.	Pin Name
No.51	DSPCLK	→	No.1	SCK
No.49	DSPDI	→	No.143	MOSI
No.84	DSPSS	→	No.2	$\overline{SS}$
No.85	XDSPRST	→	No.44	$\overline{RESET}$
No.81	DSPMODE	→	No.137	MODA

IC5501 μ-com port			IC8201 DIR port	
Pin No.	Pin Name		Pin No.	Pin Name
No.80	DIRDO	←	No.32	CDTO
No.77	DIRERR	←	No.36	INT0

IC5501 μ-com port			IC8501 DSP port	
Pin No.	Pin Name		Pin No.	Pin Name
No.50	DSPDO	←	No.144	MISO
No.82	HREQ	←	No.3	HREQ
No.86	DECMUTE	←	No.21	PB12 MUTE

■ CONNECTION DIAGRAM

G TRADE 3 ASSY



* This connection diagram displays the connection between the U-com, DSP, DIR and CODEC.
The pin order is different from the true assignment.

7.1.11 DISASSEMBLY

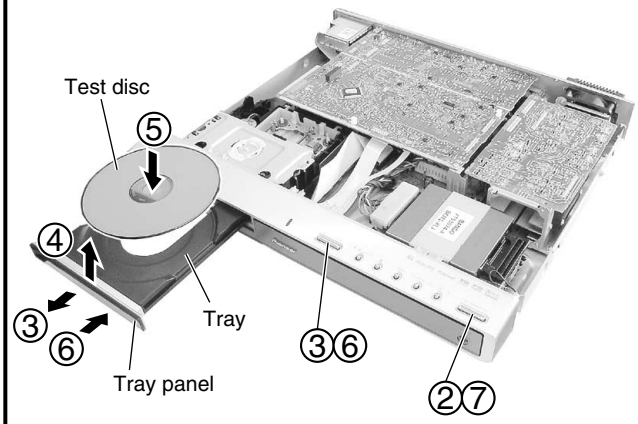
Note 1 : Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.

Note 2 : For performing the diagnosis shown below, the following jig cables for service are required:
• GGD1266 (×2) • GGD1222 • GGD1160

Diagnosis of the PCBs

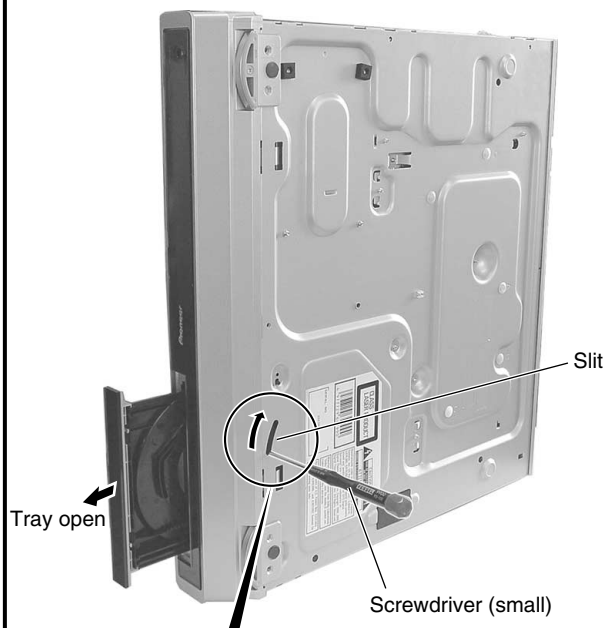
1 Bonnet and Tray panel

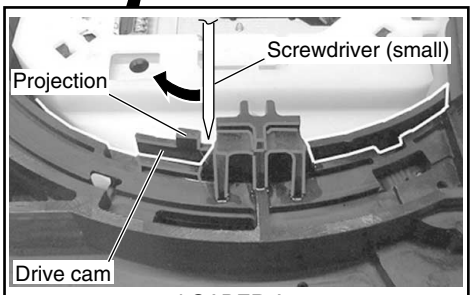
① Remove the bonnet by removing the seven screws.
② Press the ⏻ STANDBY/ON button to turn on the power.
③ Press the ⏏ OPEN/CLOSE button to open the tray.
④ Remove the tray panel.
⑤ Set the test disc.
⑥ Press the ⏏ OPEN/CLOSE button to close the tray. (The test disc is clamped.)
⑦ Press the ⏻ STANDBY/ON button to turn off the power.
⑧ Pull out the power cord from the outlet.



• How to open the tray when the power cannot be on

Insert a screwdriver (small) into the slit located at the bottom of the unit, and slide the projection of the drive cam in the 01 LOADER Assy in the direction of the arrow, as indicated in the photo. If the tray pops out a little, fully pull it out by a hand.





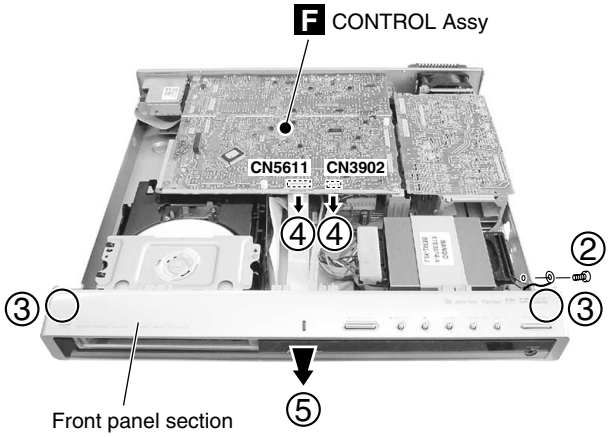
01 LOADER Assy

● **Bottom view**

2 Front panel section

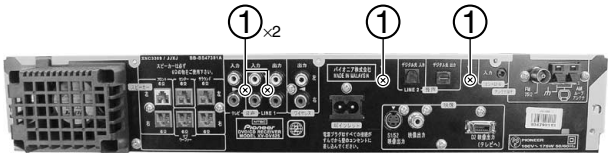
① Remove the two screws.
② Remove the one screw.
③ Unhook the four hooks.
④ Disconnect the two flexible cables.
⑤ Remove the front panel section.

● **Bottom view**



3 CONTROL Assy

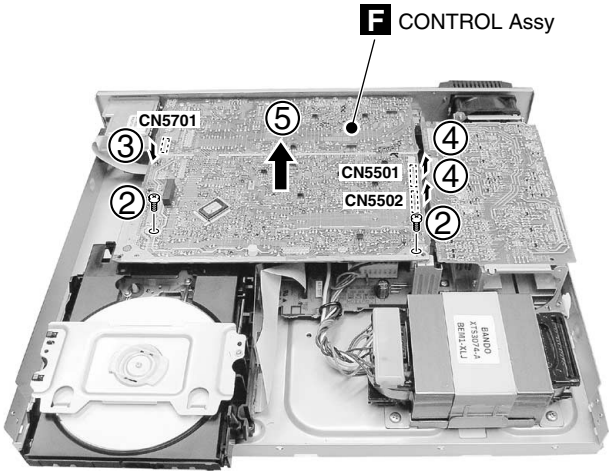
① Remove the four screws.



● **Rear view**

Note : This photograph may show a different model.
however, the method for disassembly is the same.

② Remove the two screws.
③ Disconnect the one flexible cable.
④ Disconnect the two connectors.
⑤ Remove the CONTROL Assy.



⑥ Reattatch the front panel section.

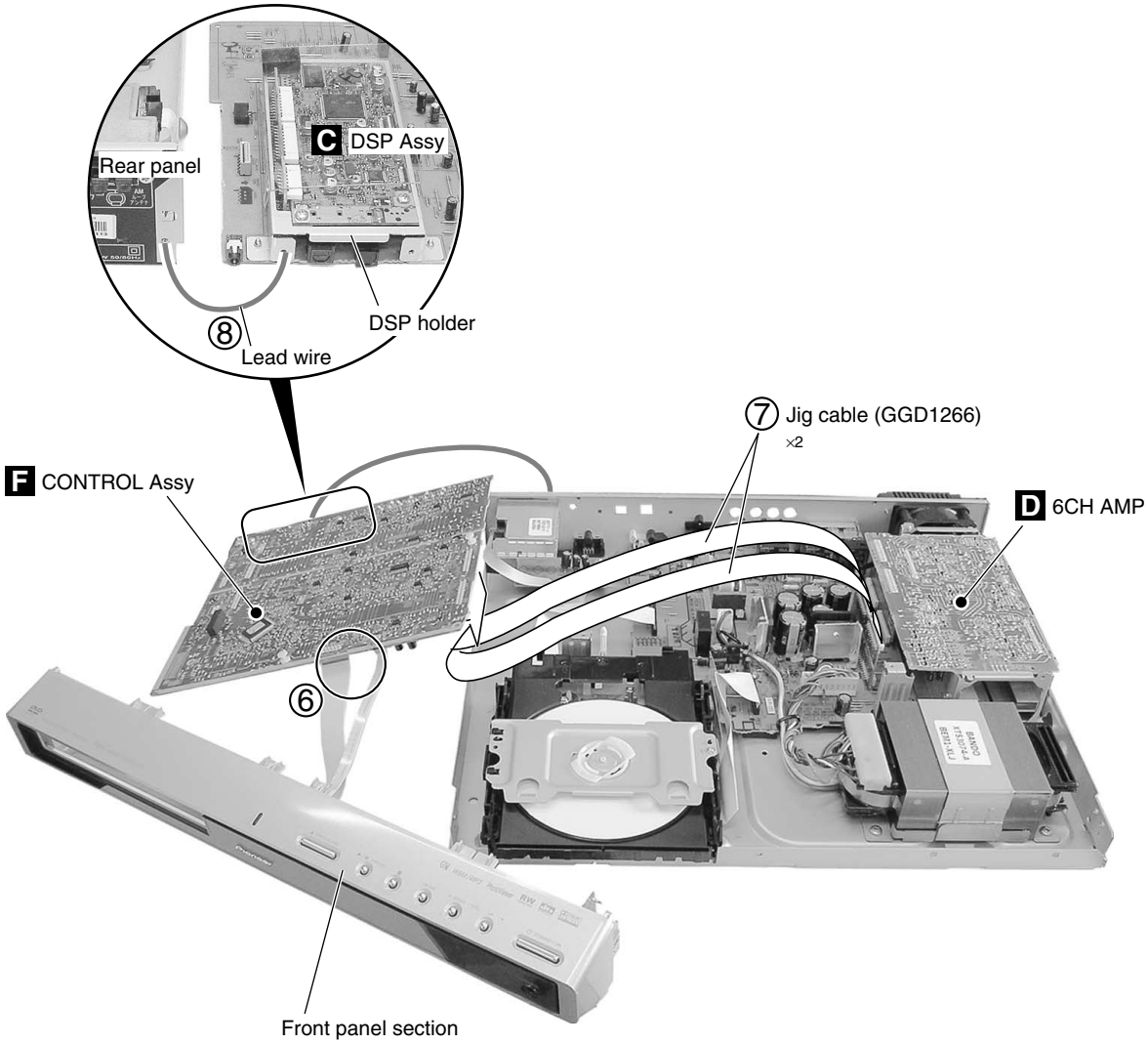
⑦ Connect the two jig cables.

⑧ Connect a lead wire (for ground) between the DSP holder (on the DSP Assy) and rear panel (chassis).

Caution :
If the lead wire is not connected and the power is turned on, following parts on the DSP Assy may be damaged.

IC8702 : TC74VHCT244AFT
IC8401 : AK4529VQ
R8415 : 4.7Ω

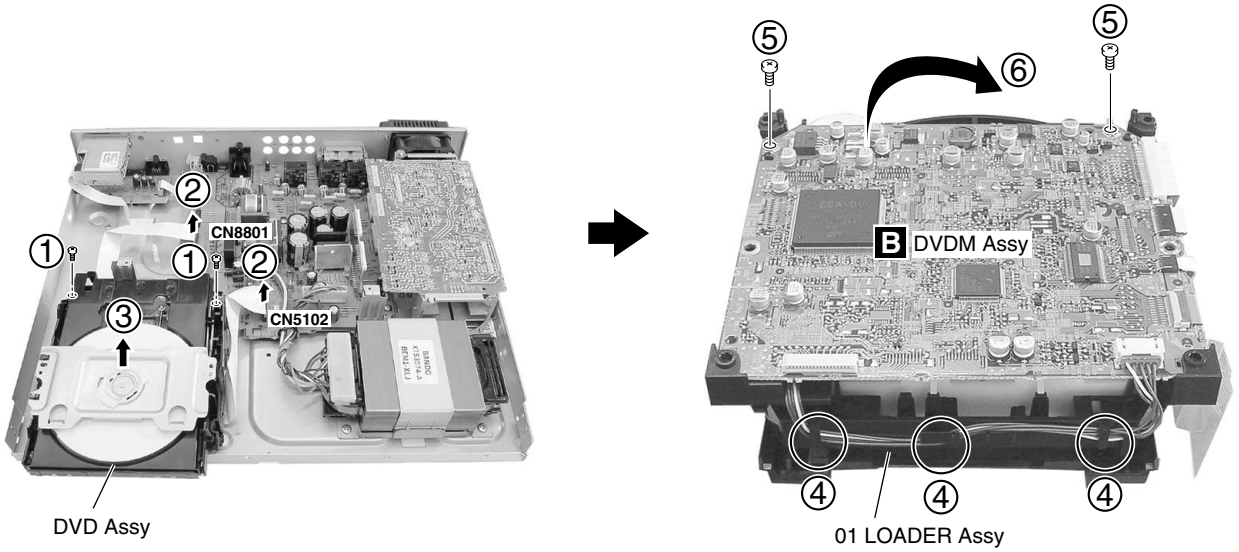
If the above parts are damaged, the audio signal can not be output.



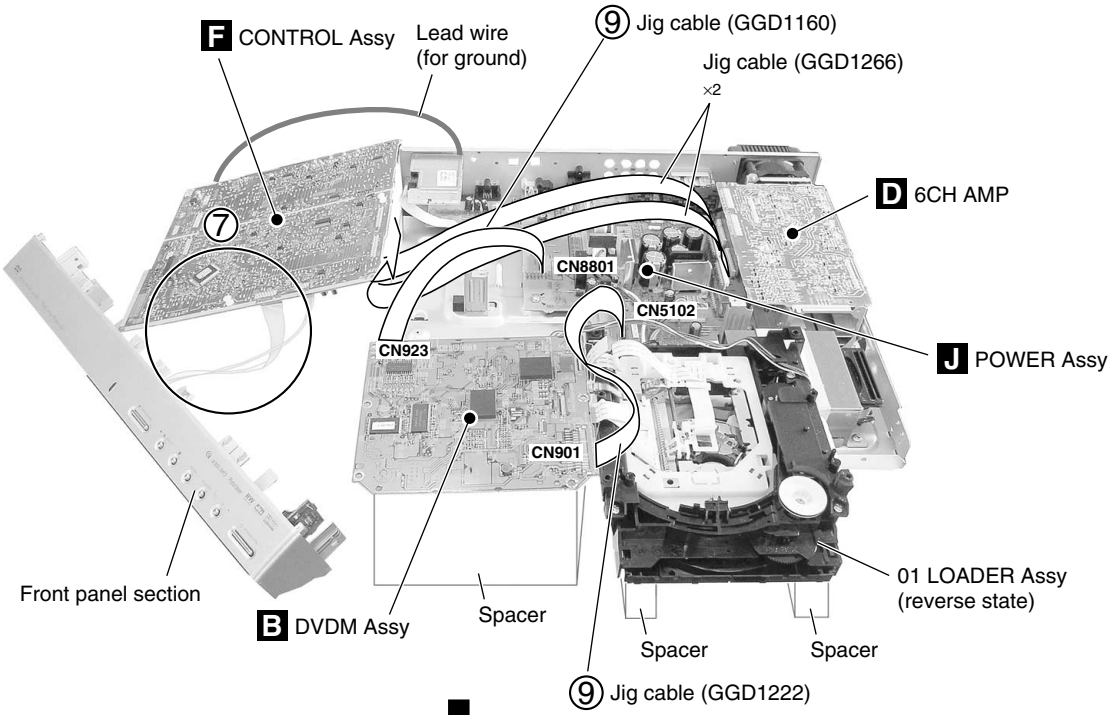
Diagnosis

4 DVDM Assy

① Remove the two screws.
② Remove the two flexible cables.
③ Remove the DVD Assy.
④ Unhook the three hooks.
⑤ Remove the two screws.
⑥ Remove and reverse the DVDM Assy.



⑦ Reattatch the CONTROL Assy and front panel section. (See Step 3.)
⑧ Arrange the 01 LOADER Assy and the DVDM Assy as shown in the photo below.
⑨ Connect the two jig cables.



Diagnosis

Removing the Traverse Mecha. Assy-S and Pickup Assy-S

1 Loading Mecha. Assy

① Remove the bridge by removing the one screw.

② Pull out the tray, then remove it by pressing the hook.

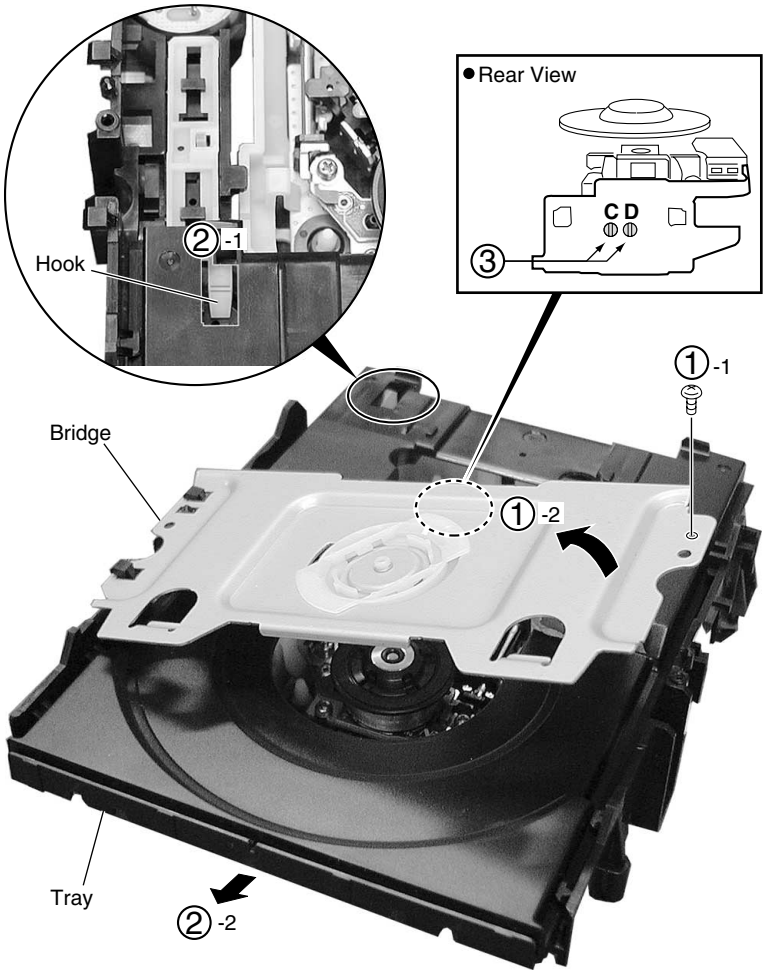
③ Short-circuit two points of C and D by soldering. (*1)

Note: After replacement, connect the flexible cable, then remove the soldered joint (open).

④ Remove the four connectors from the Loading Mecha. Assy.

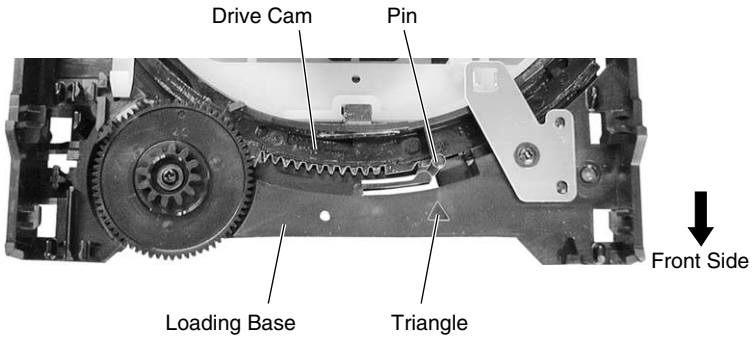
⑤ Remove the four screws that secure the Loading Mecha. Assy to the unit.

*1 : To protect from the electrostatic resisting pressure.



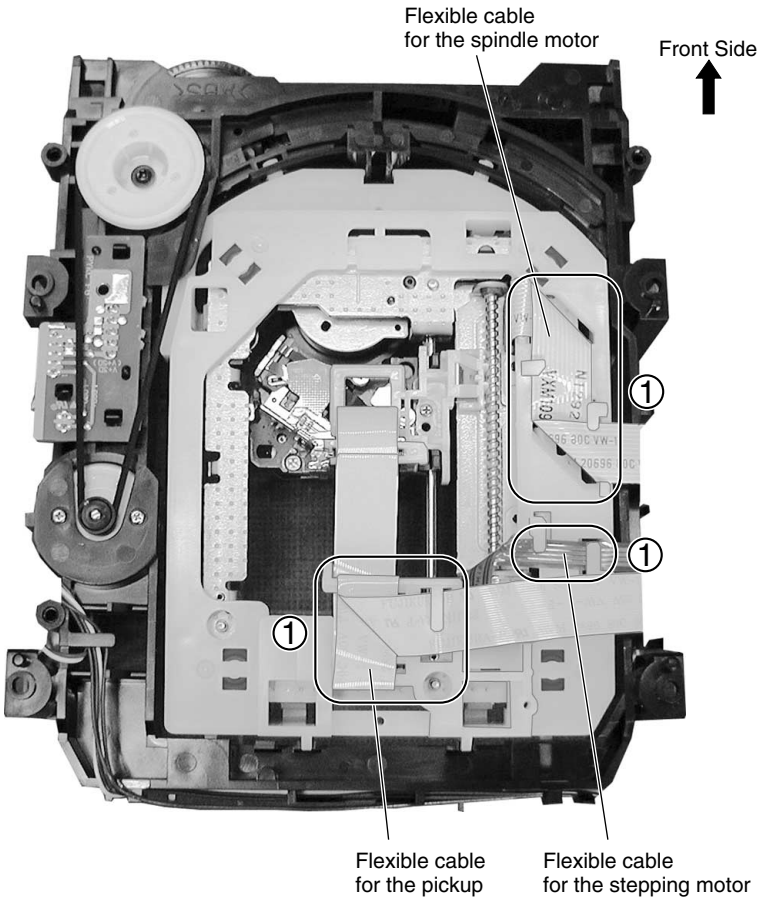
Note when reinserting the Tray

When reinserting the Tray, first align the triangle printed on the Loading Base and the pin of the Drive Cam, then insert the Tray.



2 Traverse Mecha. Assy-S

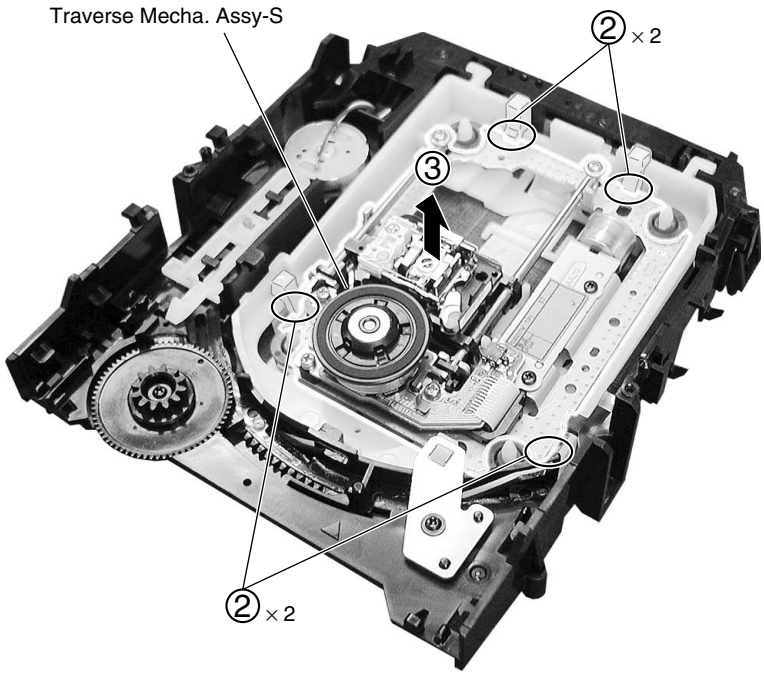
① Dislodge the flexible cables from their packaged placement.



● Bottom View

② Remove the four hooks.

③ Remove the Traverse Mecha. Assy-S.

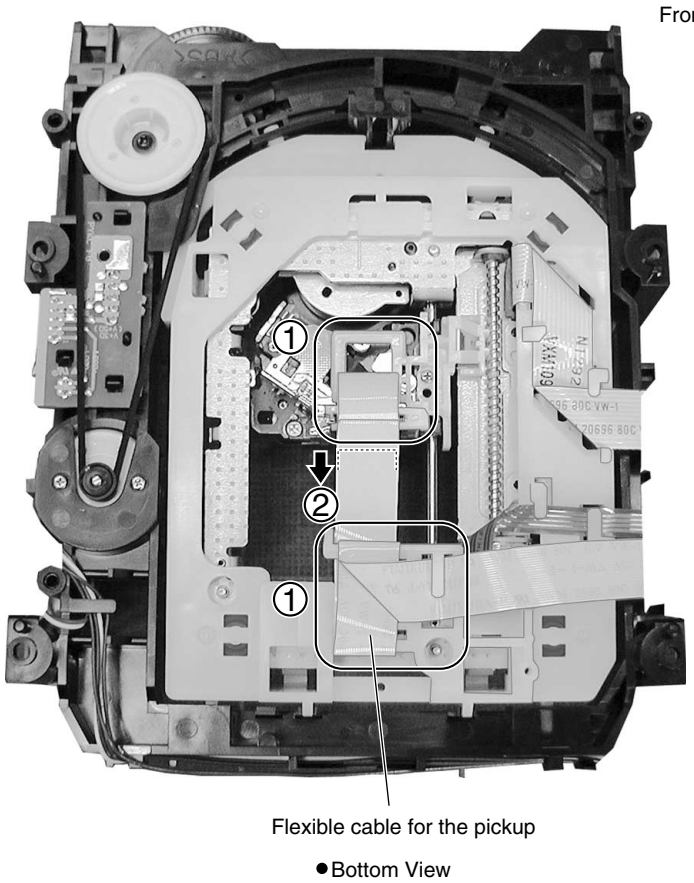


3 Pickup Assy-S

Note: The Pickup Assy-S can be removed without removing the Traverse Mecha. Assy-S. (shown as Step 2.)

① Dislodge the flexible cable for the pickup from its packaged placement.

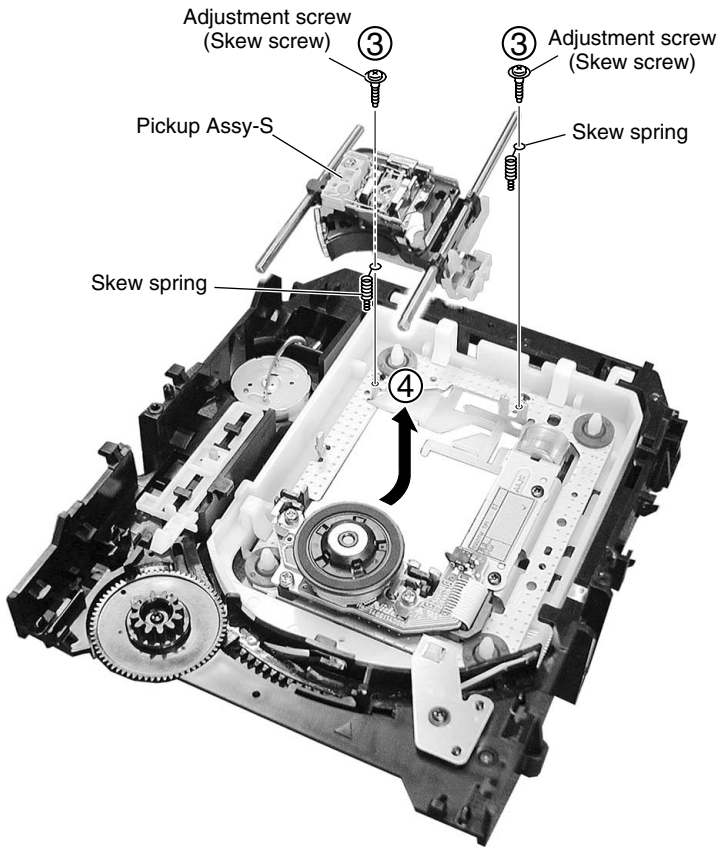
② Remove the flexible cable for the pickup.



● Bottom View

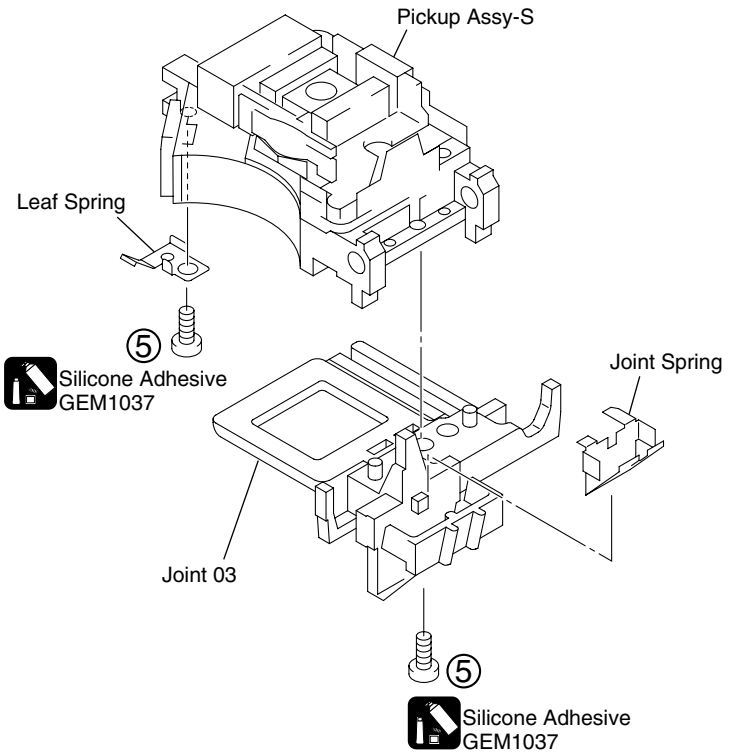
③ Remove the two skew screws and two skew springs.

④ Remove the Pickup Assy-S.



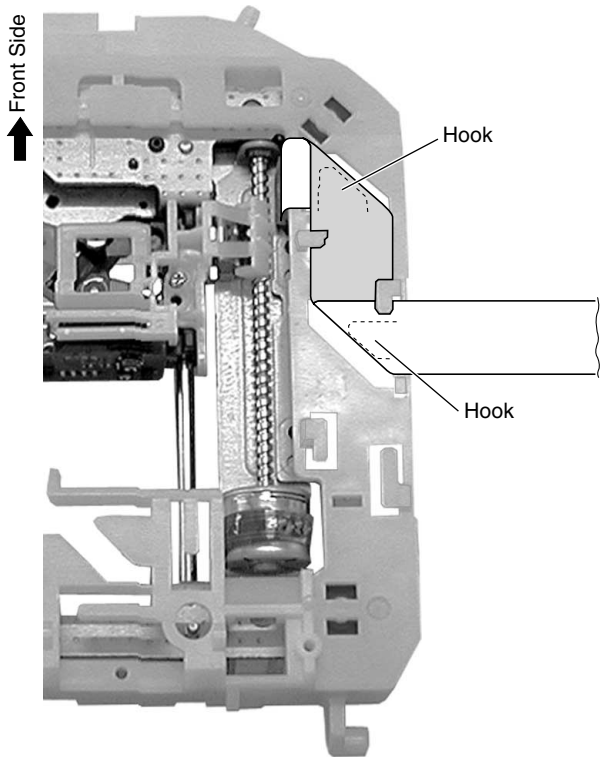
⑤ Remove the two screws.

Note: The screws are secured with epoxy. Make sure to apply epoxy after reattaching the screws.



Arrangement of the flexible cable for the spindle motor

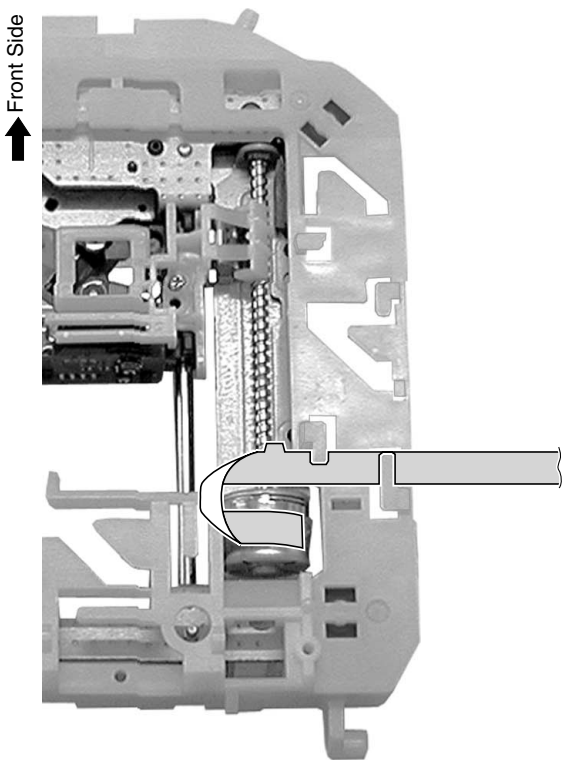
: Conductive surface



● Bottom View

Arrangement of the flexible cable for the stepping motor

: Conductive surface



● Bottom View

Arrangement of the flexible cable for the pickup

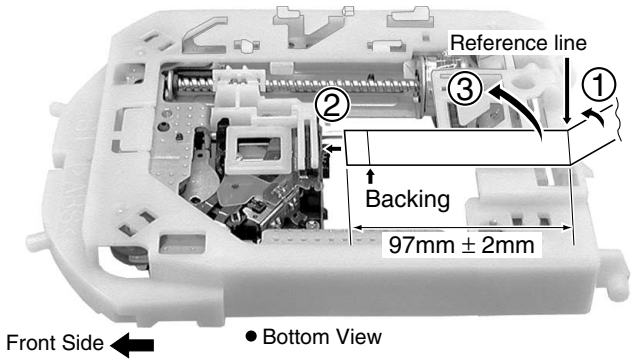
: Conductive surface

Note:
Be sure to move the Pickup Assy-S to the innermost perimeter.

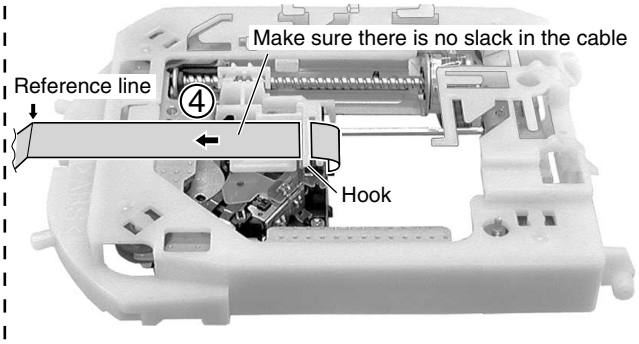
① Fold the flexible cable inward at the position of the reference line

② Attach the flexible cable of the pickup to the connector

③ Fold the flexible cable of the pickup with the backing inward

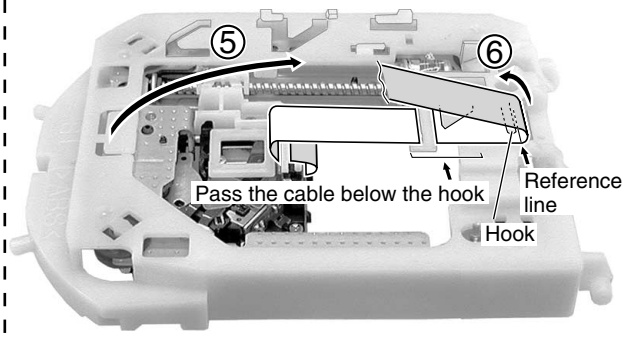


④ Pass the flexible cable through the hook not allowing any slack

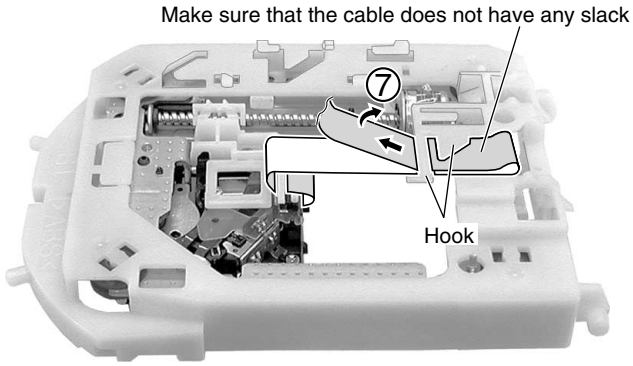


⑤ Fold the flexible cable as indicated in the photo

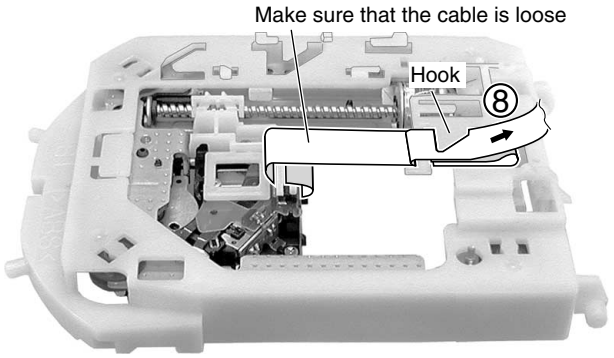
⑥ Hook the part folded in Step ① to the hook



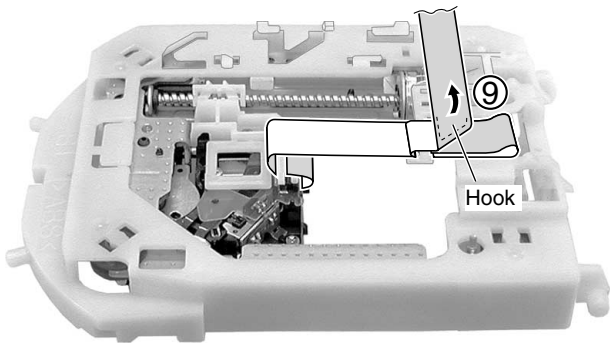
⑦ Pass the flexible cable below the hook, and fold it back



⑧ Fold the flexible cable back at the hook



⑨ Fold the flexible cable along the hook



7.2 IC

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

• **List of IC**

PDC114B

■ PDC114B (CONTROL ASSY : IC5501)

• System Control Microcomputer

● Pin Functions

No.	Mark	Pin Name	I/O	Function
1	PA3/WR#	DVDON/OFF	O	Control power supply for DVD module
2	PA4/RD#	HPDET	I	Detect to insert headphone
3	PA5/RS	NC	O	
4	P70 / INT0 / T0LCP / AN8	ACPULSE	I	AC PULSE input (Interruption)
5	P71 / INT1 / T0HCP / AN9	NC	O	
6	P72 / INT2 / T0IN	RDSCLK	I	Clock input from RDS decoder (Interruption 2, without RDS : Low output)
7	P73 / INT3 / T0IN	REMOCON	I	REMOCON signal input (Interruption 3)
8	RES#	XRESET	I	μ-com reset input
9	XT1 / AN10	XT1	–	Subclock (connect to VDD when no use)
10	XT2 / AN11	XT2	–	Subclock (leave open when no use, and set the bit 6 of OCR SFR)
11	VSS1	VSS1	–	
12	CF1	CF1	–	Main Clock (connect to VDD when no use)
13	CF2	CF2	–	Main Clock (leave open when no use)
14	VDD1	VDD1	–	
15	P80 / AN0	SIMUKE	I	Destination distinction input
16	P81 / AN1	MODEL	I	model distinction input
17	P82 / AN2	VDET	I	DVD 3.3V detection input
18	P83 / AN3	KEY1	I	Key1 input
19	P84 / AN4	NC	O	NC
20	P85 / AN5	NC	O	NC
21	P86 / AN6	NC	O	
22	P87 / AN7	XPROTECT	I	Protection and Fan Error detection input
23	P10/SO0	SDATA	O	System bus data output (AMP side output)
24	P11 / SI0 / SB0	MDATA	I	System bus data input (AMP side input)
25	P12 / SCK0	SCLK	I	System bus clock input
26	P13 / SO1	SR+Tx	O	UART Tx of SR+ function
27	P14 / SI1 / SB1	SR+Rx	I	UART Rx of SR+ function
28	P15 / SCK1	NC	O	
29	P16/T1PWML	SYSCS2	O	Chip select 2 for system bus (to DVD module)
30	P17/T1PWMH/BUZ	SYSCS1	O	Chip select 1 for system bus (to DVD module)
31	PE0	XHPMUTE	O	HP MUTE ON/OFF
32	PE1	XRECMUTE	O	REC OUTPUT MUTE ON/OFF
33	PE2	XMUTEC	O	Cch MUTE ON/OFF
34	PE3	RYR	O	REAR RELAY ON/OFF
35	PE4	RYFSC	O	FRONT/SW/CENTER RELAY ON/OFF
36	PE5	(3/5CONVERT)	O	3/5 v convert control for SR+ function
37	PE6	TIMERLED	O	Control TIMER LED
38	PE7	LEVELSHIFT	O	VOL 0 to 5 : H
39	VSS4	VSS4		
40	VDD4	VDD4		

No.	Mark	Pin Name	I/O	Function
41	PF0	ATT10dB	O	Control ATT 10dB
42	PF1	ATT6dB	O	Control ATT 6dB
43	PF2	STEST	I	Set TEST MODE for Service
44	PF3	UTEST	I	Set UNIT CHECK for checker
45	PF4	DTSDMX	O	Cntrol of gain-up for dts down-mix
46	PF5	SWFMX	O	Control for subwoofer mix
47	PF6	NC	I	(When this port don't use , please connect GND)
48	PF7	NC	I	(When this port don't use , please connect GND)
49	SI2P0/SO2	DSPDI	O	Data output to DSP (MOTOROLA) and DIR, SIO2: LSB first
50	SI2P1/SI2/SB2	DSPDO	I	Data input from DSP (MOTOROLA)
51	SI2P2/SCK2	DSPCLK	O	Clock output to DSP (MOTOROLA) and DIR
52	SI2P3/SCK20	TXCE	O	Chip enable for tuner LSI
53	PWM1	NC		NC
54	PWM0	NC		NC
55	VDD2	VDD2		
56	VSS2	VSS2		
57	P00	XFLRST	O	Reset for FL driver
58	P01	FLCS	O	Chip enable for FL driver
59	P02	FLCLK	O	Clock for FL driver
60	P03	FLDAT	O	Data for FL driver (serial data input)
61	P04	TXCLK	O	Clock for tuner LSI
62	P05	TXODATA	O	Data for tuner LSI
63	P06	NC	O	NC
64	P07	RDSPOW	O	Control power supply of RDS (L : POWER ON)
65	P20/INT4/T1IN	RDSDATA	I	Input RDS data
66	P21/INT4/T1IN	TXIDATA	I	Input data from tuner LSI
67	P22/INT4/T1IN	DVDACK	I	Ackknowlegement from DVD MODULE (Interruption 4)
68	P23/INT4/T1IN	XVMUTE	O	VIDEO MUTE request to DVD MODULE
69	P24/INT5/T1IN	DVDMUTE	I	Request of MUTE from DVD MODULE (Interruption 5)
70	P25/INT5/T1IN	NC	O	NC
71	P26/INT5/T1IN	TVSEL	O	TV AUDIO INPUT SELECT
72	P27/INT5/T1IN	XWMUTE	O	WIRE LESS MUTE request
73	P30	WSELA	O	WIRE LESS OUTPUT SELECT A
74	P31	INPUTSELB	O	AUDIO INPUT SELECT B
75	P32	INPUTSELA	O	AUDIO INPUT SELECT A
76	P33	XTL0	O	Selection X'tal to DIR
77	P34	DIRERR	I	LOCK/UNLOCK from DIR
78	P35	DIRRST	O	Reset to DIR /CODEC
79	P36	DIRCS	O	Chip select to DIR/CODEC
80	PB7/D7	DIRDO	I	Data input from DIR/CODEC

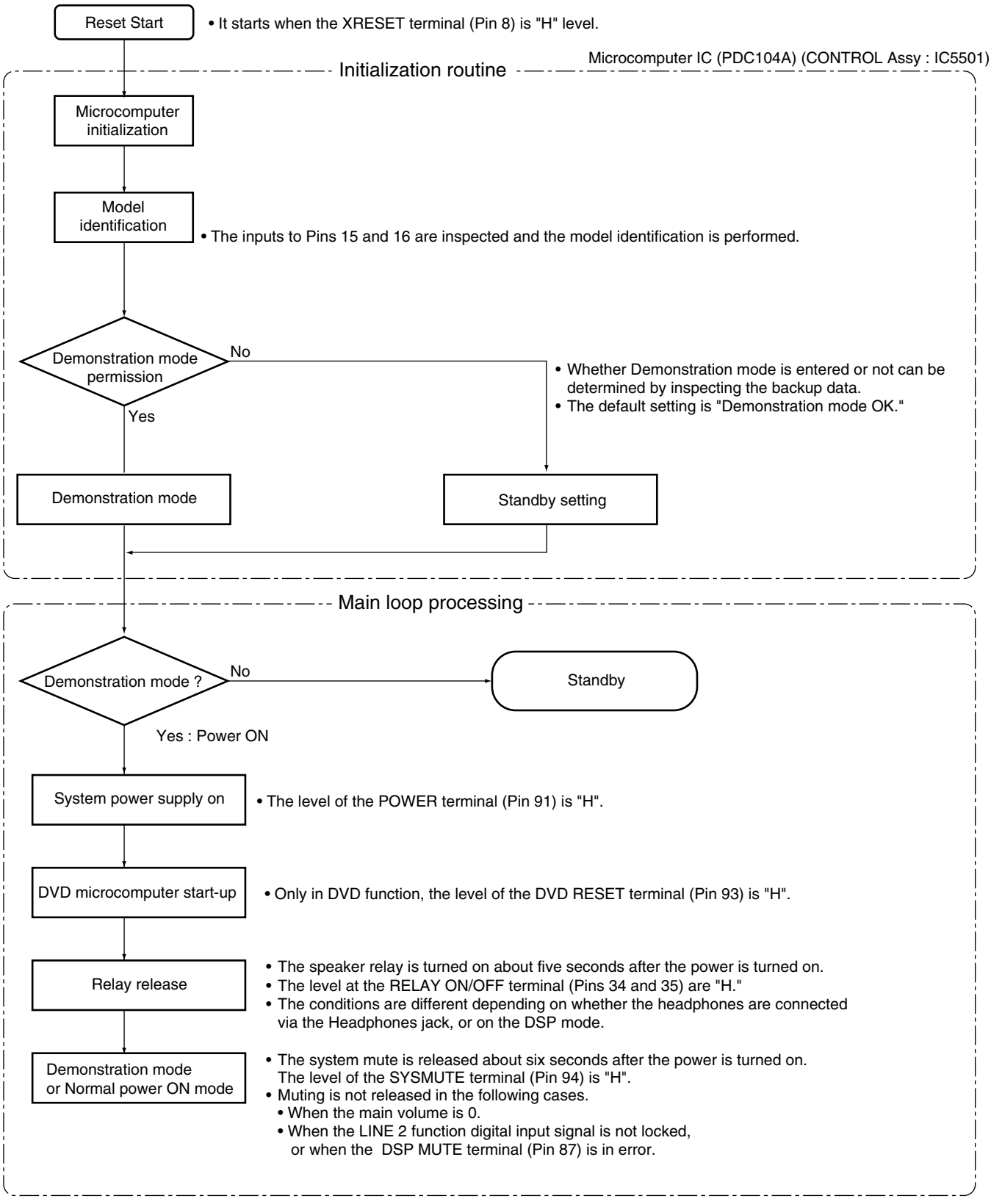
No.	Mark	Pin Name	I/O	Function
81	PB6/D6	DSPMODE	O	MODE selection (ROM/RAM) to DSP (MOTOROLA)
82	PB5/D5	DSPHREQ	I	Error detection from DSP (MOTOROLA)
83	PB4/D4	NC	O	
84	PB3/D3	DSPSS	O	Slave selection to DSP (MOTOROLA)
85	PB2/D2	XDSPRST	O	RESET to DSP (MOTOROLA) MODULE
86	PB1/D1	DECMUTE	I	Detection of 1st DSP boot success from DSP MODULE
87	PB0/D0	XDSPMUTE	O	MUTE requeat to DSP MODULE
88	VSS3	VSS3	–	
89	VDD3	VDD3	–	
90	PC7/A7	PASSANDREW	O	Control for bypass Andrew circuit (Tuner test for Europe/Korea model)
91	PC6/A6	SYSPOW	O	Control power supply of system
92	PC5/A5	XTVMUTE	O	Control mute of TV(EURO)
93	PC4/A4	XDVDRST	O	RESET to DVD MODULE
94	PC3/A3	XSYSMUTE	O	Control mute of system
95	PC2/A2	(VOLMUTE)	O	(Contorol mute of E-vol IC)
96	PC1/A1	VOLCLK	O	Clock for E-vol IC
97	PC0/A0	VOLDATA/CE	O	Data/CE for E-vol IC
98	PA0/CS2#	FLASHE/D	–	for FLASH writing
99	PA1/CS1#	FLASHDO	–	for FLASH writing
100	PA2/CS0#	FLASHCLK	–	for FLASH writing

- Port0 (P00-P07) can be selected for input or output by each 4 bits (P00-P03,P04-P07). Set for input when reset. And it can be set C-MOS or Nch-OD by each 1 bit in option.
- Port1 (P10-P17) can be selected for input or output by each 1 bit. Set for input when reset. And it can be set C-MOS or Nch-OD by each 1bit in option.
- Port2 (P20-P27) can be selected for input or output by each 1 bit. Set for input when reset. And it can be set C-MOS or Nch-OD by each 1 bit in option.
- Port3 (P30-P36) can be selected for input or output by each 1 bit. Set for input when reset. And it can be set C-MOS or Nch-OD by each 1 bit in option.
- Port7 (P70-P73) can be selected for input or output by each 1 bit. Set for input when reset.
- Port8 (P80-P87) can be selected for input or output by each 1 bit. Set for input when reset.
- PortA (PA0-PA5) can be selected for input or output by each 1 bit. Set for input when reset. And it can be set C-MOS or Nch-OD by each 1 bit in option.
- PortB (PB0-PB7) can be selected for input or output by each 1 bit. Set for input when reset. And it can be set C-MOS or Nch-OD by each 1 bit in option.
- PortC (PC0-PC7) can be selected for input or output by each 1 bit. Set for input when reset. And it can be set C-MOS or Nch-OD by each 1 bit in option.
- PortE and PortF can be selected for input or output by each 2 bits.

- In case of without RDS, it is best that RDSDATA and RDSCLK are assigned as I/O port which can be set output and output low level.

7.3 EXPLANATION

7.3.1 SEQUENCE AFTER POWER ON


Reset Start
• It starts when the XRESET terminal (Pin 8) is "H" level.
Microcomputer IC (PDC104A) (CONTROL Assy : IC5501)
Initialization routine
Microcomputer initialization
Model identification
• The inputs to Pins 15 and 16 are inspected and the model identification is performed.
Demonstration mode permission
No
Yes
• Whether Demonstration mode is entered or not can be determined by inspecting the backup data.
• The default setting is "Demonstration mode OK."
Demonstration mode
Standby setting
Main loop processing
Demonstration mode ?
No
Standby
Yes : Power ON
System power supply on
• The level of the POWER terminal (Pin 91) is "H".
DVD microcomputer start-up
• Only in DVD function, the level of the DVD RESET terminal (Pin 93) is "H".
Relay release
• The speaker relay is turned on about five seconds after the power is turned on.
• The level at the RELAY ON/OFF terminal (Pins 34 and 35) are "H."
• The conditions are different depending on whether the headphones are connected via the Headphones jack, or on the DSP mode.
Demonstration mode or Normal power ON mode
• The system mute is released about six seconds after the power is turned on. The level of the SYSMUTE terminal (Pin 94) is "H".
• Muting is not released in the following cases.
• When the main volume is 0.
• When the LINE 2 function digital input signal is not locked, or when the DSP MUTE terminal (Pin 87) is in error.

- If no pulse is input to the AC terminal (Pin 4) for about 60 msec when the microcomputer is in Memory Backup mode, it will not do any processing.
- The unit will recover from Memory Backup mode if a reset command is input to the XRESET terminal (Pin 8).

7.3.2 PROTECTION CIRCUIT

If the TIMER LED on the front panel flashes, check the protection circuit.
Note: If the protection circuit activates, the unit will not recover for 60 seconds even if the AC power cord is disconnected then reconnected.
If you activate Service Test mode, the protection circuit becomes invalid, which makes diagnosis easy. (To activate Service Test mode, while connecting STEST port (IC5501 Pin43) to "+5V", connect AC power cord.)
There are three types of operations for the protection circuit, which are indicated on the FL display when Service Test mode is entered:

PRTCT WNG: The unit was shut down because of an abnormality in the AMP system. (The PROTECT line operates at the MID level.)
PRTCT ERR: The unit was shut down because of a failure in the AMP system. (The PROTECT line operates at the LO level.)
DVD PRTECT: The unit was shut down because of a failure in the DVD system. (The VDET line operates at the HI or LO level.)

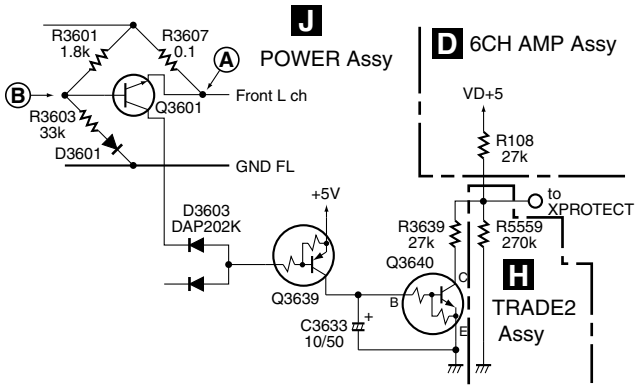
■ Conditions for the protect circuit operations

	Voltage		Conditions	FL display in Service Test mode
PROTECT	HI level	>3.55V	Normal	
	MID level	1.8V - 3.5V	The unit is shut down because of an abnormality.	PRTCT WNG
	LO level	<1.8V	The unit is shut down because of a failure.	PRTCT ERR
VDET	HI level	>4.25V	The unit is shut down because of a failure.	DVD PRTECT
	MID level	3.3V	Normal	
	LO level	<2.5V	The unit is shut down because of an abnormality.	DVD PRTECT

The possible failures for each error message are as follows:
PRTCT WNG:
• The Speaker terminal became overloaded because of short-circuit. (See ①.)
PRTCT ERR:
• The main power supply became LO level because of short-circuit or disconnection of connectors. (See ②.)
• Disconnection of the FAN connector or interruption of rotation of the fan (See ③.)
• DC was generated at the output because of a failure in the AMP system, etc. (See ④.)
• Abnormal temperature was detected by the thermistor. (See ⑤.)
DVD PRTECT:
• An error was generated in the main power supply inside the DVDM. (See ⑥.)

■ Protection circuit that activates against a PRTCT WNG error

① When the Speaker terminal becomes overloaded



In Normal mode, the speaker (6 ohms) is connected between the FL and GND FL points. Because the voltage at Point Ⓐ is higher than that at Point Ⓑ, Q3601 does not operate.

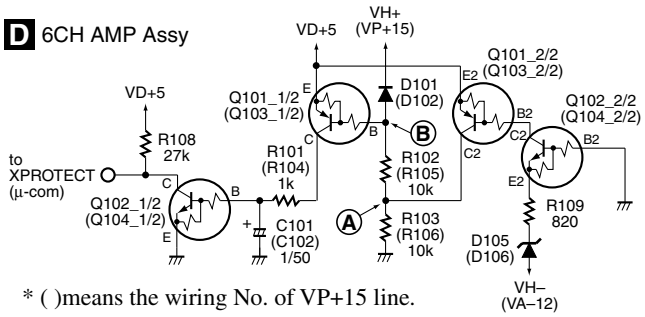
If the resistance between the FL and GND FL points becomes 1.83 ohms or less, Q3601 begins to operate, Q3639 is turned on, Q3640 (E, C, and B)is turned on, and the level of XPROTECT becomes MID.
→ The microcomputer detects the XPROTECT level and shuts the power to the unit off.

■ Protection circuit that activates against a PRTCT ERR error

② When the main power supply becomes LO level because of short-circuit or disconnection of connectors

② -1 Short-circuit-detection circuit for the amplifier power circuit (VH+[VP+15], VD+5, -12 V [VA-12])

Circuit for shutting the power off when VP+15, VD+5, or VA-12 is short-circuited to ground (GND)



* ( )means the wiring No. of VP+15 line.

- In Normal mode, as Q101 (Q103) (E2, B2, C2) and Q102 (Q104) (E2, B2, C2) are on, the voltage at Point Ⓐ is about 5 V. The voltage at Point Ⓑ is therefore about the same. As Q101 (Q103) (E, C, B) is off, Q102 (Q104) (E, C, B) is also off.

(1) When VH+(VP+15) is short-circuited to GND

As the voltage at Point Ⓑ becomes almost ground potential, and Q101 (Q103) (E, C, B) then Q102 (Q104) (E, C, B) are turned on, the level of XPROTECT becomes low.

→ The microcomputer detects the XPROTECT level and shuts the power to the unit off.

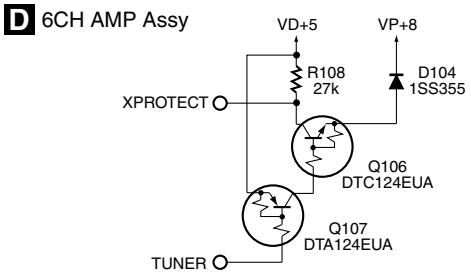
(2) When VH-(VA-12) is short-circuited

As the electric potential of VE at Q102 (Q104) (E2, C2, B2) becomes the same as that at VB, Q102 (Q104) (E2, C2, B2) is turned off. Following this, Q101 (Q103) (E2, B2, C2) is turned off, which changes the voltage at Points Ⓐ and Ⓑ to a value other than 5 V. Therefore, Q101 (Q103) (E, C, B) then Q102 (Q104) (E, C, B) are turned on, the level of XPROTECT becomes low.

(3) When VD+5 is short-circuited

The level of the XPROTECT line becomes low. The microcomputer detects the XPROTECT level and shuts the power to the unit off.

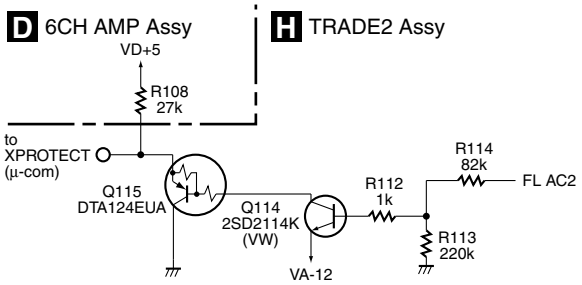
② -2 Short-circuit-detection circuit for the DVD power supply (VP+8)



As the TUNER line is fixed to GND level, Q107 is always on. If the level at VP+8 falls to GND level because of short-circuit, etc., Q106 is turned on, and the level of the XPROTECT line becomes low.

← The microcomputer detects the XPROTECT level and shuts the power to the unit off.

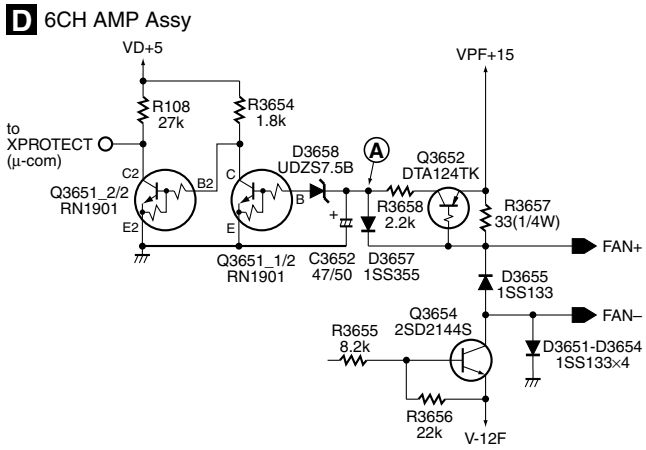
② -3 Short-circuit-detection circuit for VFDP



If VFDP is short-circuited to GND, or if the DC electric potential at FL AC1 becomes GND level (in Normal mode: about -27 V) because of a failure in the DC bias circuit of FL AC1, Q114 then Q115 are turned on, and the level of XPROTECT becomes low.

→ The microcomputer detects the XPROTECT level and shuts the power to the unit off.

③ When the FAN connector is disconnected or when rotation of the fan is interrupted

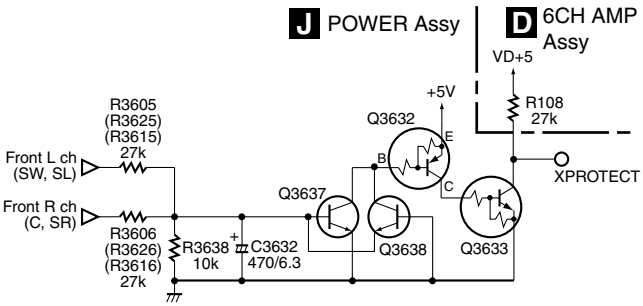


If no fan is connected between FAN+ and FAN-, or when the fan cannot rotate because of a foreign object caught in the blades, the BASE of Q3652 becomes OPEN, and Q3652 and Q3651-1/2 (E, C, B) are turned off. Then Q3651-2/2 (E2, B2, C2) is turned on, and the level of XPROTECT becomes low.

→ The microcomputer detects the XPROTECT level and shuts the power to the unit off.

When FAN+ and FAN- are short-circuited, the electric potential at Point Ⓐ becomes higher than GND level by the addition of the values at D3656 and D3657. As this value is lower than that at D3658, Q3651 (E, C, B) is turned off, Q3651 (E2, B2, C2) is turned on, and the level of XPROTECT becomes low.

④ When DC is generated at the output because of a failure in the AMP system, etc.



• In Normal mode, both Q3637 and Q3638 are off.

(1) When positive (+) DC voltage is generated at the SP terminal

When positive (+) DC voltage is generated at the L or R channel, and VB of Q3637 becomes higher than that at the operation point, Q3632 (E, C, B) is turned on, and the level of XPROTECT becomes low.

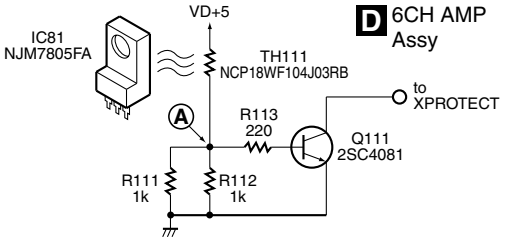
→ The microcomputer detects the XPROTECT level and shuts the power to the unit off.

(2) When negative (-) DC voltage was generated at the SP terminal

Q3638 is turned on, and XPROTECT is activated.

⑤ When abnormally high temperature is detected by the thermistor

⑤ -1 IC81 abnormal temperature detection circuit

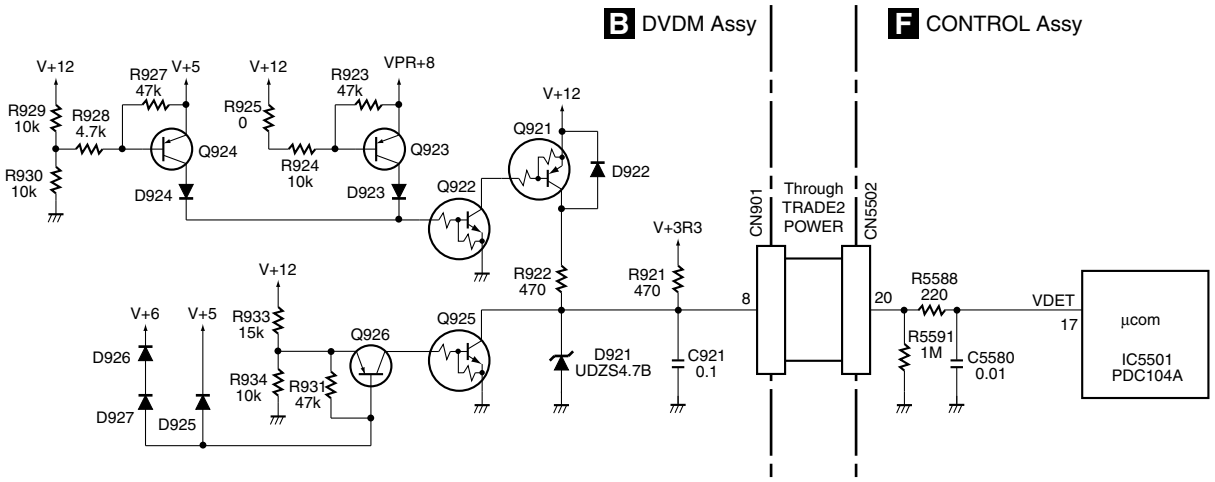


The voltage at Point Ⓐ becomes the divided voltage of TH111 and R111//R112 (combined resistance of parallel-connected resistors R111 and R112.) In Normal mode, the resistance at TH111 is much higher than R111//R112, and Q111 is off. (Note that the resistance at TH111 becomes lower as the temperature increases.) If the solder temperature at IC81 increases abnormally, the temperature at TH111 (thermistor) mounted closest to the land of IC81 increases accordingly, and the resistance at TH111 decreases.

When the temperature at TH111 reaches 90-110_C (varying according to conditions,) the voltage at Point (A) becomes high enough to turn Q111 on, and the level of the XPROTECT line becomes low. The microcomputer detects the XPROTECT level and shuts the power to the unit off.

■ Protection circuit that activates against a DVD PRTECT error

⑥ The DVDM monitors the voltage of the main power supply by VDET signals.
In Normal mode, the VDET signal is at the MID level (3.3 V). In the following conditions, the VDET signal level becomes L or H, and the microcomputer is notified of this abnormality.



Items to be detected by VDET

(1) When the power voltages inside the DVDM become abnormal, as shown in the table below

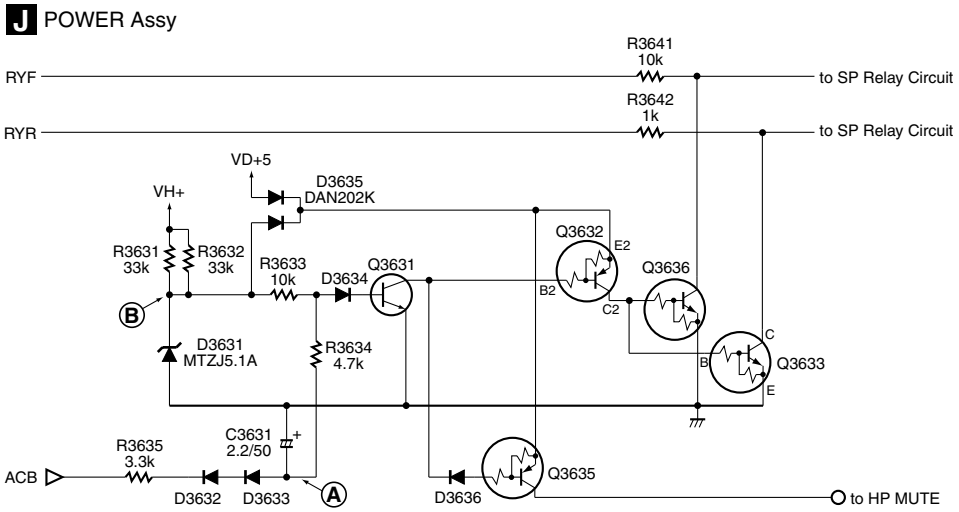
Status	Power	Voltage	Operation								VDET voltage
			Q923	Q924	Q922	Q921	D921	D922	Q926	Q925	
In Normal mode			off	off	off	off	off	off	off	off	Mid
When an abnormality is generat	VDVD+12	<1V	(on)	(on)	(on)	(off)	off	on	off	off	L
		>15.5V	off	off	off	off	off	off	on	on	L
	VPR+8	<5.2V	–	off	off	off	off	–	on	on	L
		>12.6V	–	on	on	on	on	–	off	off	H
	V+6	<3V	–	–	–	–	–	–	on	on	L
	V+5	<3.6V	–	off	off	off	off	–	on	on	L
		>6.6V	–	on	on	on	on	–	off	off	H
	V+3R3	<2.5V	–	–	–	–	–	–	–	–	L
		>4.25V	–	–	–	–	(on)	–	–	–	H

(2) When the VDET signal to the microcomputer is interrupted because of defective soldering of the 30-pin connector or incomplete insertion of FFC
→ The VDET level is lowered by the pull-down resistor (1 Mohms) on the side of the microcomputer.

■ Other protection circuit

AC detection circuit

⑦ This is a protection circuit that prevents popping sounds in the Speaker and Headphones output when the AC power cord is connected or disconnected.



- The voltage at Point Ⓐ is a DC voltage which has been generated by half-wave rectification on the minus side of the AC power.
- The voltage at Point Ⓑ is approx. 5 V.

- The base voltage at Q3631 is a voltage between Points Ⓐ and Ⓑ divided by R3633 and R3634. As this voltage is negative (-) in Normal mode, Q3631 is off.
  When the AC power cord is disconnected and there is no AC power input, the base voltage at Q3631 becomes +0.6 V or more, and Q3631 is turned on. Then, the operations below follow.

(1) SP Relay

Q3632 (E2, C2, B2), Q3633, and Q3636 (E, C, B) are turned on, the line to activate the SP relay becomes low level, and the SP Relay is turned off.

(2) HP MUTE

Q3635 is turned on, and the MUTE circuit for HP is turned on.

7.4 CLEANING

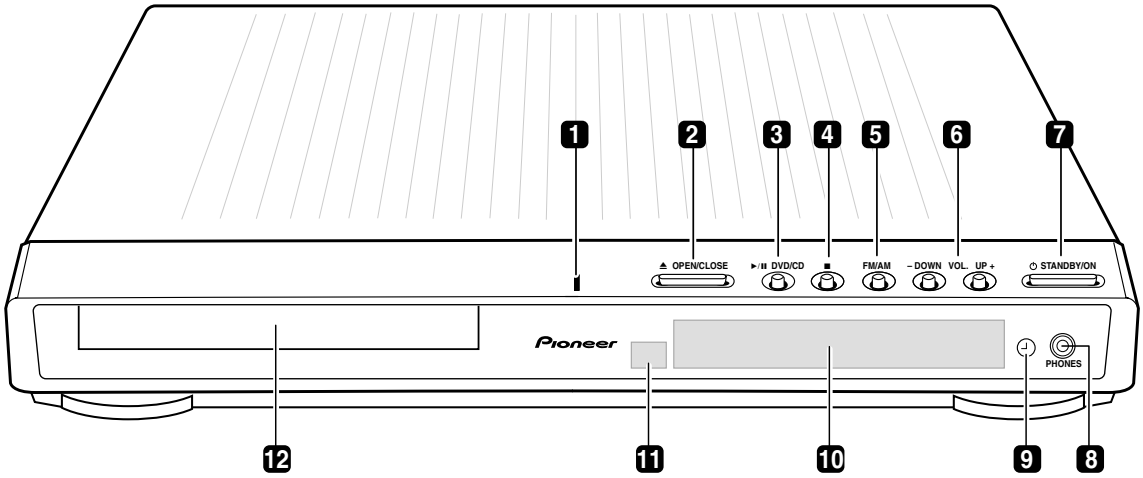
Before shipping out the product, be sure to clean the following positions by using the prescribed cleaning tools:

Position to be cleaned	Cleaning tools
Pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008

Position to be cleaned	Cleaning tools
Fans	Cleaning paper : GED-008

8. PANEL FACILITIES

Front panel



1 Operation indicator

2 ⏏ OPEN/CLOSE
Press to open/close the disc tray.

3 ▶/II DVD/CD
Press to switch to the **DVD/CD** function. Also press to start/pause/resume playback.

4 ■
Press to stop playback.

5 FM/AM
Press to switch to the tuner function, then to toggle between the FM and AM bands.

6 VOLUME buttons
Use to adjust the volume.

7 ⏻ STANDBY/ON
Press to switch the system on or into standby.

8 PHONES jack
Headphone jack.

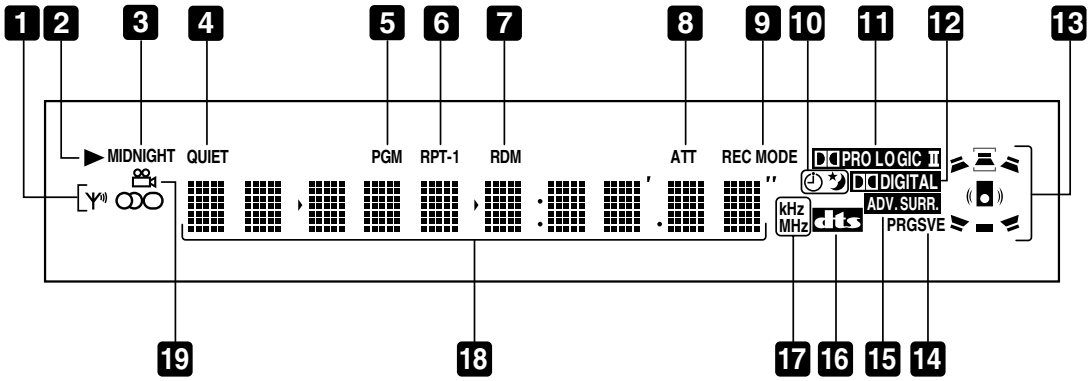
9 Timer indicator
Lights when the wake-up timer is set.

10 Display
See *Display* for detailed information.

11 Remote sensor

12 Disc tray

Display



1 Tuner indicators

Lights when a broadcast is being received.

Lights when a stereo FM broadcast is being received in auto stereo mode.

Lights when FM mono reception is selected.

2 ►
Lights when a disc is playing.

3 MIDNIGHT
Lights when the Midnight mode is selected.

4 QUIET
Lights when the Quiet mode is selected.

5 PGM
Lights when a program list has been programmed.

6 RPT and RPT-1
RPT lights during repeat play. **RPT-1**lights during repeat one-track play.

7 RDM
Lights during random play.

8 ATT
Lights when the input attenuator is active for the currently selected analog input.

9 REC MODE
Lights when the Rec Mode is on.

10 Timer indicators

Lights when the wake-up timer is set.

Lights when the sleep timer is active.

11 PRO LOGIC II
Lights during Dolby Pro Logic II decoding.

12 DIGITAL
Lights during playback of a Dolby Digital source.

13 Speaker indicators
These show which speakers are being used to output the current source (they are not placement diagrams). The illustrations below show some example displays.

5.1 channel surround sound

Stereo (2.1 channel) sound

3.1 channel sound with Dialogue enhancement on the center channel

5.1 channel surround sound with Virtual Surround Back mode active

14 PRGSVE
Lights when progressive scan video output is selected.

15 ADV.SURR.
Lights when one of the Advanced or Front Surround listening modes is selected.

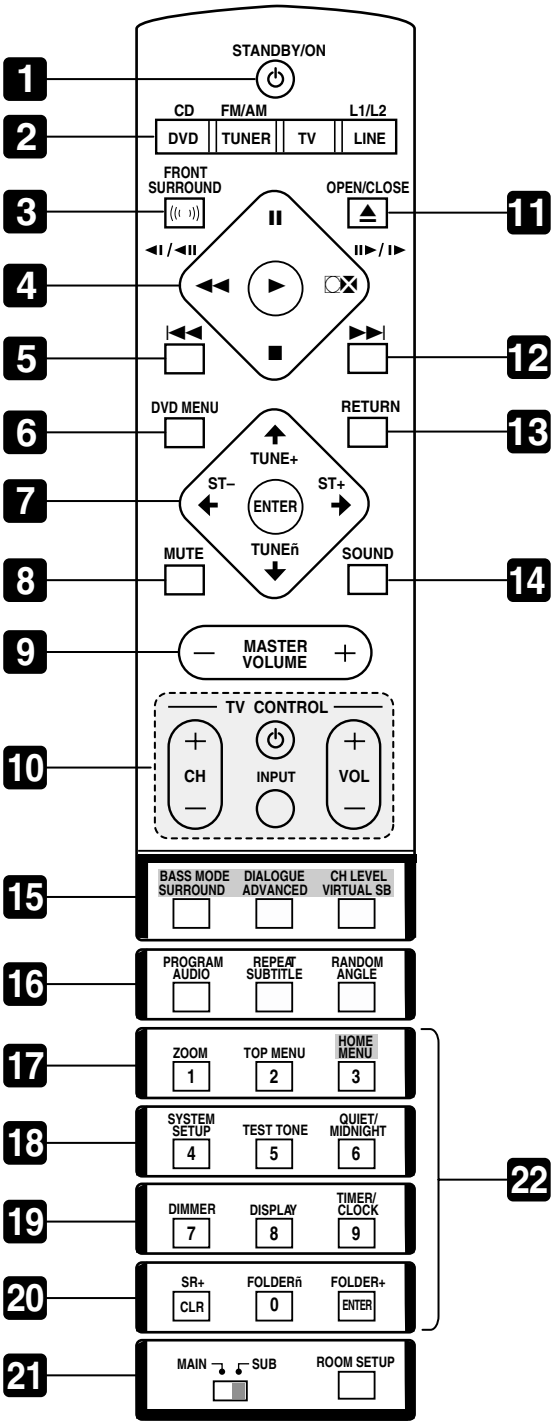
16
Lights during playback of a DTS source.

17 kHz / MHz
Indicates the unit of the frequency shown in the character display (**kHz** for AM, **MHz** for FM).

18 Character display

19
Lights during multi-angle scenes on a DVD disc.

Remote control



Important

- Functions printed in green on the remote control are accessed by switching the **MAIN**/**SUB** switch to **SUB**.

1 ⏻ STANDBY/ON
Press to switch the system on or into standby.

2 Function select buttons
Press to select the source you want to listen to (**DVD (CD)**. **TUNER**,**TV**, **LINE**)

3 FRONT SURROUND
Use to select a Front Surround listening mode.

4 Disc playback controls

►
Press to start or resume playback.

◄◄ and ◄I/◄II
Use for reverse slow motion playback, frame reverse and reverse scanning.

►► and II►/I►
Use for forward slow motion playback, frame advance and forward scanning.

II
Press to pause playback; press again to restart.

■
Press to stop playback.

5 I◄◄
Press to jump to the beginning of the current chapter/track, then to previous chapters/ tracks.

6 DVD MENU
Press to display a DVD disc menu, or the Disc Navigator if a VR format DVD-RW, CD, Video CD/Super VCD, MP3, WMA or JPEG disc is loaded.

7 Cursor buttons, ENTER and tuning buttons

Cursor buttons
Use the cursor buttons (↑/↓/←/→) to navigate on-screen displays and menus.

ENTER
Press to select an option or execute a command.

TUNE +/–
Use to tune the radio.

ST +/–
Use to select station presets when listening to the radio.

8 MUTE
Press to mute all sound from the speakers and headphones (press again to cancel).

9 MASTER VOLUME
Use to adjust the volume.

10 TV CONTROL

⏻
Press to switch the TV on or into standby.

INPUT
Press to switch the TV input.

CH +/–
Use to select channels on the TV.

VOL +/–
Use to adjust the volume on the TV.

11 ⏏ OPEN/CLOSE
Press to open/close the disc tray.

12 ▶▶|
Press to jump to the next chapter/track.

13 RETURN
Press to return to a previous menu screen.

14 SOUND
Press to access the sound menu, from which you can adjust the DSP effect level, bass and treble, etc.

15 Surround sound mode/sound enhancement buttons

SURROUND
Use to select a Surround mode.

ADVANCED
Use to select an Advanced Surround mode.

VIRTUAL SB
Press to switch the Virtual Surround Back speaker effect on/off.

BASS MODE
Use to select a Bass Mode.

DIALOGUE
Use to select a Dialogue mode.

CH LEVEL
Use to adjust the speaker level.

16 DVD/CD buttons

AUDIO
Press to select an audio channel or language.

SUBTITLE
Press to display/change the DVD subtitle display.

ANGLE
Press to change camera angle during DVD multi-angle scene playback.

PROGRAM
Use to program/play a program list.

REPEAT
Use to select a repeat play mode.

RANDOM
Use to select a random play mode.

17 ZOOM
Press to change the screen zoom level.

TOP MENU
Use to display the top menu of a DVD disc in the play position (this may be the same as pressing **DVD MENU**).

HOME MENU
Press to display (or exit) the on-screen menu for Initial Settings, Play Mode functions, etc.

18 SYSTEM SETUP
Use to make various system and surround sound settings.

TEST TONE
Use to output the test tone (for speaker setup).

QUIET/MIDNIGHT
Use to select the Quiet and Midnight modes.

19 DIMMER
Press to switch between normal and dimmed front panel display.

DISPLAY
Press to display/change disc information shown on-screen.

TIMER/CLOCK
Press to display the clock and to access the timer menu.

20 SR+
Press to switch the SR+ mode on/off.

FOLDER –
Press to jump to previous folders.

FOLDER +
Press to jump to the next folder.

CLR
Press to clear an entry.

ENTER
Selects menu options, etc. (works exactly the same as the **ENTER** button in **7** above).

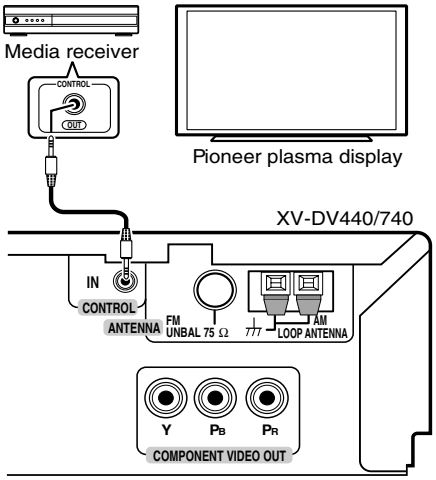
21 MAIN/SUB
Change from **MAIN** to **SUB** to access the functions/commands printed in green on the remote.

ROOM SETUP
Press to start Room Setup.

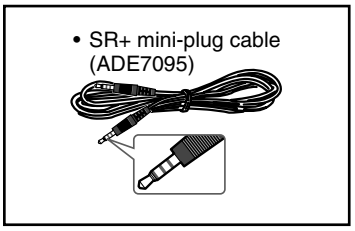
22 Number buttons
Use the number buttons for selecting chapters/tracks from a disc directly.

Using this unit with a Pioneer plasma display

If you have a Pioneer plasma display (models PRO-1110HD, PRO-910HD, PDP-5040HD and PDP-4340HD), you can use an SR+ cable (see note below) to connect it to this unit and take advantage of various convenient features, such as automatic video input switching of the plasma display when the input is changed.



SERVICE PARTS



- **Use a 3-ringed miniplug SR+ cable to connect the CONTROL IN jack of this unit through a media receiver to the CONTROL OUT jack of your plasma display.**

Before you can use the extra SR+ features, you need to make a few settings in the unit. See *SR+ control options for Pioneer plasma displays* detailed instructions.

Using the SR+ mode with a Pioneer plasma display

When connected using an SR+ cable, a number of features (such as automatic video input switching and volume muting on the plasma display) become available to make using this unit with your Pioneer plasma display even easier.

See also *SR+ control options for Pioneer plasma displays* for information on setting up the unit.

1 Make sure that the plasma display and this unit are switched on and that they are connected with an SR+ cable.

See *Using this unit with a Pioneer plasma display* above for more on connecting these components.

2 To switch SR+ mode on/off, press SR+ (SHIFT+ 7).

The front panel display shows the new setting; **SR+ ON** or **SR+ OFF**.

- If **SR+ Error** shows in the display, it means there is a communication problem between the unit and the plasma display. Check all connections and retry.

Note

- The 3-ringed SR+ cable from Pioneer is commercially available under the part number ADE7095. Contact the Pioneer Customer Support division for more information on obtaining an SR+ cable.
- You won't be able to use the remote sensor of this unit with the **CONTROL IN** jack of this unit connected to the **CONTROL OUT** jack of your plasma display. You can use the remote sensor of the plasma display (even in standby) as long as the power isnít switched off.
- The automatic volume muting feature is enabled separately; see *SR+ control options for Pioneer plasma displays.* (You can also use the System Setup menu to switch the SR+ mode of this unit.)
- If you disconnect the SR+ cable or switch the plasma display off while SR+ is on, the setting automatically reverts to **SR+ OFF**. This displays an error if you switch the input of the unit with the plasma display switched off. Likewise, if this unit is switched off, the link with the plasma display will be terminated.

■ Jigs list

Name	Jig No.	Remarks
Service Remote Control Unit	GGF1381	adjustment, diagnosis
DVD Test Disc (DVD-Video)	GGV1025	Check of DVD-Video
CD Test Disc	STD-905	Check of CD
Flexible Cable (18P)	GGD1160	diagnosis of DVDM ASSY
Flexible Cable (30P)	GGD1222	diagnosis of DVDM ASSY
Flexible Cable (23P) (×2)	GGD1266	diagnosis of CONTROL ASSY
DVD Data Disc	GGV1133 (*)	diagnosis (ID data setting)
DVD Data Disc	GGV1174 (*)	diagnosis (ID data setting)

(*) : GGV1133 is now released, however GGV1174 will be released in MAY/2004.
Until GGV1174 is released, use GGV1133 data disc.